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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
John C. Green, *Director*

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Use of funds for printing this publication approved by the Director of the Bureau of the Budget, November 22, 1961

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CONTENTS

	Page
HOW TO ORDER TRANSLATIONS	v
BIBLIOGRAPHY	573
AGRICULTURE	573
Animal Husbandry	574
Plant Cultivation	575
ASTRONOMY	576
Astrophysics	577
BEHAVIORAL SCIENCES	578
Personnel and Training	578
BIOLOGICAL SCIENCES	579
Anatomy and Physiology	579
Biochemistry	580
Botany	583
Medical Specialties and Equipment	583
Microbiology	584
Pathology	584
Pharmacology and Toxicology	585
Radiobiology	588
Zoology	590
CHEMISTRY	591
Analytical Chemistry	594
Inorganic Chemistry	596
Organic Chemistry	596
Physical Chemistry	600
EARTH SCIENCES	605
Climatology and Meteorology	606
Geodesy	607
Geology	607
Mineralogy	608
Oceanography	609
Seismology	609
ENGINEERING	610
Chemical Engineering	611
Civil Engineering	617
Electrical and Electronic Engineering	617
Mechanical Engineering	622
Ordnance, Missiles, and Satellite Vehicles	624
Sanitation and Safety Engineering	624
FOOD, HANDLING, AND PACKAGING EQUIPMENT	624
MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT	624
Engines and Propulsion systems	625
Machine Parts and Mechanisms	626
Manufacturing Equipment and Processes	626
Transport, Traction and Hoist Facilities	627
MATERIALS	628
Adhesives and Sealants	629
Ceramics and Refractories	629
Fuels, Lubricants, and Hydraulic Fluids	631
Leather and Textiles	632
Photographic Materials	632
Plastics	634
Rubber and Elastomers	637
Wood and Paper	637
MATHEMATICS	637
Computing Devices	638
MECHANICS	639
Aerodynamics and Pneumatics	641
Hydrodynamics, Hydraulics, and Hydrostatics	643
METALLURGY	644
Ferrous Metals	649
Light Metals	650
Nonferrous (except light) Metals	650
Structural Metallurgy and Corrosion	651

	Page
NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY	652
Elementary Particles	654
Instruments and Installations	656
Isotope Separation	657
Nuclear Engineering and Power	657
Nuclear Reactions	658
PHYSICS	659
Acoustics	659
Electronics	660
Molecular Physics and Spectroscopy	661
Optics	663
Solid State Physics	664
Theoretical Physics	668
Thermodynamics	668
Wave Propagation	669
RESEARCH METHODS, TECHNOQUES AND EQUIPMENT	670
BOOK REVIEWS	A-11
TRANSLATIONS IN PROCESS	B-17
PERIODICALS TRANSLATED COVER-TO-COVER	C-21
AUTHOR INDEX	I-1
SUBJECT INDEX	I-5
JOURNAL INDEX	I-13
NUMBER INDEX	I-19

UNITED STATES DEPARTMENT OF COMMERCE
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TECHNICAL TRANSLATIONS

Volume 9, Number 6 Pages 573 - 672 March 30, 1963

*Descriptors marked with an asterik are included in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 49 (GENERAL SERIES). 14 Jan 63 [13]p. JPRS: 17128.
Order from OTS or SLA $1.60 63-15094

Abstract trans. of Academia Republicii Populare Romine. Comunicarile, 1962, v. 12, no. 12, p. 1071-1169.

DESCRIPTORS: *Abstracts, Bibliography, *Mathematics, *Mechanics, Acoustics, *Plants.

RADIO GUIDANCE: ANNOTATED BIBLIOGRAPHY BASED ON SOVIET OPEN-SOURCE MATERIALS 1958-JUNE 62 (PRELIMINARY). Prepared in response to AID Work Assignment no. 37. 18 Oct 62 [33]p. 152 refs. AID rept. 62-171; AD-287 217.
Order from OTS or SLA $3.60 63-13051

DESCRIPTORS: *Radio navigation, *Guidance, *Bibliography, Abstracts, Range finding, Control, Antiaircraft defense systems, Rockets, Gyroscopes, Inertial navigation, Automatic pilots, Lasers, Cybernetics, S band, X band, Satellite vehicles, Radar tracking, Telemetering, Infrared detection, Radio, Guided missiles.

The 152 entries are arranged alphabetically by author.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
Feb 63, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY TRANSLATIONS NO. 16. 16 Jan 63 [54]p. JPRS: 17165.
Order from OTS or SLA $5.60 63-15117

Trans. of T'u Jang [Hsüeh Pao] (Chinese People's Republic) 1961 [v. 9] no. 1, p. 17-19 and 22; no. 3, p. 32; no. 4, p. 30-32; no. 8, p. 55-58; mono. Chung Kuo Ti Chih Hsüeh (Geology of China) Peiping, 1959, p. 338-343; and from Kuang Ming Jih Pao (Chinese People's Republic) 1962, 15 Nov, p. 1.

DESCRIPTORS: Science, China, *Agriculture, Training, *Corn, *Fertilizers, *Humic acids, *Soils, Salinity, *Cotton, Lakes, *Drainage, *Geology, *Minerals, Distribution.

Contents:
Help agricultural cadres to improve their technical competence
Ma T'ung I's experience in the abundant corn of harvest, by Sung Ping K'uei and others
Effectiveness of humate in increasing the yield of paddy and soybean, by Ch'en Ch'i-yu and Wu K'o Wen
Green manure and the improvement of saline soil, by Lu Ping Chang
Effects of follow-up fertilizers on roots of cotton plants, by Ch'en Hsüeh Yang
Improvement and utilization of lake fields and alluvial land, by Hsin K'un Ch'ien
The regularity of mineral distribution in China, by Chang Ta.

LIME QUANTITY COMPUTER FOR IMPROVING OF ACID SOIL. 28 September 1962, 9p. (foreign text included). 349/52 Japan.
Order from INT $30.00

Trans. of Japanese patent 349/52 by Keiichi Sugiyama of 10316 Nakazawa-mura, Kami-Ina-gun Nagano, Pref, filed 1 May 50.

DESCRIPTORS: *Computers, Soils, Acids, Agriculture, *Calcium compounds, *Oxides.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 52. 14 Jan 63 [32]p. JPRS: 17139.
Order from OTS or SLA $3.60 63-15099

Trans. of 9 selected articles from Oct-Nov 62 issues of 6 Soviet newspapers.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Radio equipment, *Remote control system, Control boxes, Production, Tests, *Transportation, Construction, *Machine shop practice, Design.

Contents:
The radio controlled skidding tractor
The production of the agricultural machinery at the Atrama plant
The kirovets tractors at the test stations
Lack of rail transportation for the cotton hauling trailers, by V. Antyukhova
New shop construction at the Kishinev tractor assembly plant, by M, Bfimenko
Difficulties at the Kishinev tractor assembly plant, by G. Badlov
Search for the new garden-vineyard tractor designs, by A. Veremeenko
The problems of the agricultural machinery designers due to the general lack of coordination, by Va. Levin'sh
The tractors today and tomorrow.

Andreev, A. A.
ANALYTICAL TREATMENT OF CERTAIN PROBLEMS IN THE KINEMATICS OF WHEELS OF AGRICULTURAL MACHINES (Analiticheskaya Razrabotka Netotorykh Voprosov Kinematiki Koles Sel'skokhozyaistvennykh Mashin). July 61 [9]p. TIL/T. 5161; [DSIR] NLL M. 3453.
Order from OTS or SLA $1.10 62-25346

Trans. of Sborn[ik] Trud[ov] po Zemledel'chesk[oi] Mekh[anike] (USSR) 1954, v. 2, p. 3-12.

DESCRIPTORS: Mathematical analysis, *Vehicle wheels, *Agricultural machinery, Dynamics, Velocity, Rotation.

Borodkin, V. V.
A METHOD FOR EXPERIMENTAL DETERMINATION OF THE ROLLING RESISTANCE OF FREE RUNNING WHEELS. (Metod Eksperimental'nogo Opredeleniya Soprotivleniya Svobodnykh Koles Perekatyvaniyu). July 61, [11]p. TIL/T 5162; [DSIR] NLL M. 3452
Order from OTS or SLA $1.60 62-25347

Trans. of Sbor[nik] Trud[ov] po Zemledel'chesk[oi] Mekh[anike] (USSR) 1954, v. 2, p. 61-72.

DESCRIPTORS: *Vehicle wheels, *Vehicle tracks, Soils. Resistance.

Goryacheva, V. I.
USE OF SYSTEMIC INSECTICIDES IN CONTROLLING INJURIOUS FOREST INSECTS (Opyty Primeneniya Vnutrirastitel'novo Sposoba Bor'by s Vrednymi Lesnymi Nasekomymi) tr. by J. Hardy. 12 July 62 [44]p. (foreign text included) 15 refs. [CSIRO] Trans. no. 5469.
Order from OTS or SLA $4.60 62-33098

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Lesovodstva i Mekhanizatsii Lesnogo Khozyaistva. Sbornik Rabot po Lesnomu Khozyaistvu (USSR) 1958, v. 37, p. 106-122.

DESCRIPTORS: *Insecticides, Insect control, *Forestry, *Homoptera, Hemiptera, DDT, Thiols, Phosphates, Hexachlorocyclohexanes.

Pivovarov, L. R. and others.
DER EINFLUSS DER SELBSTERHITZUNG DER TORFE IN MIETEN AUF IHREN DUENGEWERT (The Influence of Self-heating of Peat in Clamps on their Manuring Value). 11p. (text in German).
Order from TIB $2.00

Trans. of Torfyanaya Promyshlennost'(USSR), 1961, [v. 38] no. 8, p. 26-29.

DESCRIPTORS: *Heating, Agriculture, *Clamps, Fertilizers, Peat.

Sarmatov, M. I.
BERECHNUNG EINER BAND-TORF-BRIKETTIER-PRESSE (Calculation of a Peat-briquetting press). (text in German).
Order from TIB $1.20

Trans. of Torfyanaya Promyshlennost'(USSR), 1961, [v. 38] no. 1, p. 29-31.

DESCRIPTORS: *Hydraulic presses, Peat.

Animal Husbandry

Barth, K.
PRACTICAL USE OF FAT IN THE RATIONS OF AGRICULTURAL DOMESTIC ANIMALS. [1962] 7p. (figs. omitted) 26 refs.
Order from SLA $1.10 62-18844

Trans. of Fette Seifen Anstrichmittel (West Germany) 1962, v. 64, no. 6, p. 521-524.

DESCRIPTORS: *Fats, *Food, Diet, *Agriculture, *Animals, Nutrition, Corn, Wheat, Costs, Production, Meat, Energy.

Mitroiu, P., Ungureanu, C. and others.
DATA ON SOME BOTULINIC INTOXICATIONS WITH ENSILAGED FOOD IN HORSES. 16 Oct 61 [9]p. JPRS: 10555.
Order from OTS or SLA $1.10 62-23265

Trans. of Probleme Zootehnice si Veterinare (Rumania) 1961, v. 11, no. 6, p. 57-61.

DESCRIPTORS: *Botulism, Toxicity, Contamination, *Food, *Horses, Agriculture, Veterinary medicine.

Pritulin, P. I.
AEROGENIC IMMUNIZATION OF ANIMALS (Ob Aerogennoi Immunizatsii Zhivotnykh). [1961] [10]p. Trans. V-1759.
Order from OTS or SLA $1.10 62-23291

Trans. of Veterinariya (USSR) 1961, v. 38, no. 11, p. 19-23.

DESCRIPTORS: *Inhalation immunization, *Animals, Effectiveness, Typhoid vaccine.

Animals who had paratyphoid by aerogenic infection, obtained a very stable and steady immunity in 8-10 days; much more intense than in animals which had it after subcutaneous and enteral inoculation.

Plant Cultivation

EFFECTS OF IONIZING RADIATIONS ON SEEDS. STI/PUB/13. Sep 61, 670p.
Order from National Agency for International Publications, Inc., 801 Third Ave., New York, 22,N. Y. $9.50 as IAEA SU-33.

DESCRIPTORS: *Seeds, *Radiation effects, Radiobiology, Plants, Genetics, *Symposia.

Andreev, S. V., Martens, B. K., and Molchanova, V. A.
USE OF RADIOISOTOPES AND RADIATION IN THE FIELD OF PLANT PROTECTION (Primenenie Radioaktivnykh Izotopov pri Izuchenii Voprosov Zashchity Rastenii). [1962] [19]p. 17 refs.
Order from OTS or SLA $1.60 AEC-tr-5142

Trans. of mono. Symposium of Radioisotopes and Radiation in Entomology, Bombay, 5-9 Dec 60. Proceedings, Vienna, 1962, p. 23-37.

DESCRIPTORS: *Radioactive isotopes, *Plants, *Pest control, Pesticides, *Herbicides, Detection, Radiobiology, Agriculture.

By means of the effects of ionizing radiation on microorganisms, strains of entomopathological fungi (Beanveria bassiana and Aspergillus flavus) of increased virulence have been produced. Sterilizing doses for stored products pests have been worked out and used as the basis for the design of a gamma deinsector. The use of isotopes as tracers has made it possible to follow the dynamics of the movement of insecticides within plants and within the organisms of pests; to make a comparative evaluation of toxic agents having a systemic action; and to ascertain the duration of the toxic characteristics of such agents in plants and agricultural produce. For studying the selective action of the 2, 4-D herbicides, the concentrations of herbicides as governed by additions of mineral oils were determined. The labelling of toxic chemicals with short-lived isotopes makes it possible to test the degree of effectiveness, for various crops, of airborne and ground techniques of dusting and spraying. By means of marking agricultural pests with radioisotopes it is possible to study the migration of large-scale grain-crop pests and their parasites, to define the reservoir areas, the size of the populations, etc. The method also makes it possible to study the food cycles, to locate predatoriness and parasitism among insects, and also the preferences or predatory and parasitic insects with regard to their victims and hosts.

Denisov, N. Ya. and Balli, R. Zh.
PHENOMENA OF THE "BRAIL KARST" DURING IRRIGATION (Yavleniya "Brailskogo Karsta" pri Irrigatsii) tr. by June Stevens. Sep 61 [8]p. (foreign text included). Bureau of Reclamation Trans. 385.
Order from OTS or SLA $1.10 62-25131

Trans. of Gidrotekhnika i Melioratsiya (USSR) 1960 [v. 12] no. 10, p. 52-53.

DESCRIPTORS: *Soils, *Irrigation systems, Hydrology, *Soil mechanics, Levees, Clay.

It is assumed that the craters in the canals occurred as a result of the breaks in the soil and a widening of these cracks. A great many craters developed particularly in places where the canal intersects lenses of sand, although they occurred even where there were no lenses. Because these craters are similar in appearance to a clay karst, they are called "Brail Karsts". (Author)

Golubkov, V. N. and Shekhovtsov, V. S.
IMPROVING THE PROPERTIES OF LOESS BY MEANS OF SILT INJECTION (O Zakreplenii Lessa Sposobom Vnutrennego Kol'matazha) tr. by June Stevens. Feb 61 [12]p. (foreign text included) 5 refs. Bureau of Reclamation Trans. 372.
Order from OTS or SLA $1.60 62-25124

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1960 [v. 30] no. 10, p. 21-24.

DESCRIPTORS: *Soils, Soil mechanics, Moisture, Stability, *Silt, Injection, *Bentonite, Effectiveness.

Grinfel'd, E. G.
NUTRITION OF PLANTS WITH CO_2 ASSIMILATED THROUGH THE ROOTS. (K Voprosu o Pitanii Rastenii Uglekislotoi Cherez Korni) tr. by J. Hardy. [1962] [12]p. (foreign text included) 7 refs. [CSIRO] Trans. no. 5884.
Order from OTS or SLA $1.60 62-32359

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1954, v. 97, no. 5, p. 919-922.

DESCRIPTORS: *Plants, *Carbon dioxide, Fertilizers, *Ammonium radicals, *Carbonates, Absorption, Nutrition.

Okhremenko, N. S.
WAYS OF REDUCING SUGAR LOSSES DURING THE WILTING OF GRAPES (Puti Snizheniya Poter' Sakhara pri Uvyalivanii Vinograda) tr. by R. J. Zatorski. [1962] [25]p. (foreign text included) 2 refs. [CSIRO] Trans. no. 5675.
Order from OTS or SLA $2.60 62-32238

Trans. of Biokhimiya Vinodeliya (USSR) 1960, v. 6, p. 223-234.

DESCRIPTORS: *Wines, Fruit, *Dehydration, Respiration, *Sugar, Preservation.

Strona, I. G.
THE SOVIET SEED-GROWING INDUSTRY NEEDS ITS OWN RESEARCH CENTER (Sovetskomu Semenovodstvu Neobkhodim Svoi Nauchnyi Tsentr). 13 Mar 62, 6p. Trans. A-1331.
Order from OTS or SLA $1.10 62-23568

Trans. of Selektsiya i Semenovodstvo (USSR) 1960, v. 25, no. 1, p. 28-30.

DESCRIPTORS: *Seeds, Production, Scientific research.

Vasiltsova, T. M.
METHODS OF RESEARCH INTO FLOWER BUD FORMATION AND DEVELOPMENT ON APPLE TREE (K Metodike Issledovaniya Zakladki i Razvitiya Plodovykh Pochek u Yalloni). Sep 62 [25]p. 26 refs. RTS 2096.
Order from OTS or SLA $2.60 62-32949

Trans. of Vestn[ik] S[el'sko]kh[ozyaistvennoi] N[auki] (USSR) 1959, v. 4, no. 7, p. 56-66.

DESCRIPTORS: Scientific research, *Plants, *Apples, *Fruits, Growth, Embryoes, *Fertility.

Zhuravel', M. S.
THE BREEDING OF SEEDLESS VARIETIES OF GRAPES (O Vyvedenii Bessemyannykh Sortov Vinograda) tr. by R. J. Zatorski. [1962] [14]p. (foreign text included). [CSIRO] Trans. no. 5672.
Order from OTS or SLA $1.60 62-32972

Trans. of Sadovodstvo, Vinogradarstvo i Vinodelie Moldavii (USSR) 1960 [v. 15] no. 4, p. 27-32.

DESCRIPTORS: *Genetics, *Reproduction, *Fruits, Seeds, Mutations, Taste, Growth, Agriculture.

ASTRONOMY

SOVIET ASTRONOMICAL REPORTS. 29 Jan 63 [93]p. 56 refs. JPRS: 17363.
Order from OTS $2.25 63-21016

Trans. of [Akademiya Nauk URSR] Kiev. [Holovna] Astronomichna Observatoriya. Izvestiya [1960] v. 3, no. 2, p. 27-76 and 138-150.

DESCRIPTORS: *Astronomy, Reports, *Stars, Brightness, Diffraction, Refractive index, Telescopes, Tracking telescopes, *Moon, *Solar spectrum, *Spectrum analyzers, Diffraction gratings, Spectrophotometers.

Contents:
Investigation of the flickering of star images in telescopes, by I. G. Kolchinskii
Barycentric high relief of the limb zone of the moon, by I. V. Gavrilov
The solar diffraction spectrograph of the main astronomical observatory of the Academy of Sciences, Ukrainian SSR, by E. A. Gurtovenko and E. I. Didychenko.

SOVIET ASTRONOMY ABSTRACTS IN SOVIET ABSTRACTS JOURNAL: ASTRONOMY AND GEODESY, 1962, NO. 7, PT. A. Jan 63.
Order from STS $37.50 STS-631

Trans. of 81 selected abstracts from Referativnyi Zhurnal. Astronomiya i Geodeziya (USSR) 1962, no. 7, pt. A.

DESCRIPTORS: *Abstracts, *Astronomy, *Astrophysics.

SOVIET ASTRONOMY ABSTRACTS IN SOVIET ABSTRACTS JOURNAL: ASTRONOMY AND GEODESY, 1962, NO. 7, PT. B. Jan 63.
Order from STS $32.50 STS-632

Trans. of 66 selected abstracts from Referativnyi Zhurnal. Astronomiya i Geodeziya (USSR) 1962, no. 7, pt. B.

DESCRIPTORS: *Abstracts, *Astronomy, Radio astronomy, Solar systems, Galaxies, Space probes.

Gnevysheva, R. S.
SPECTROHELIOGRAPH OF THE GORNAYA ASTRONOMICAL STATION OF THE MAIN ASTRONOMICAL OBSERVATORY OF THE ACADEM. OF SCIENCES OF THE USSR. 28 Nov 62 [7]p. 2 refs. FTD-TT-62-1429.
Order from OTS or SLA $1.10 63-13908

Unedited rough draft trans. of Solnechnye Dannye (USSR) 1960, no. 7, p. 65-68.

DESCRIPTORS: *Astronomical observatories, Solar observatories, *Solar spectrum, Spectrum analyzers, Design, Operation.

Lebedinskii, A. I. and Salova, G. I.
ON THE QUANTITY OF FREE WATER ON MARS. 1 Oct 62, 2p. AID rept. 62-159; [NASA N62-17363]; AD-287 419.
Order from OTS or SLA $1.10 63-13047

Abstract trans. of #Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 3, p. 494-505.

DESCRIPTORS: Planets, *Mars, *Water, Distribution, *Ice, Melting, Freezing.

The possibility of the existence of free water on Mars in the form of a thin snow layer or as fog is discussed. The quantity of such water is determined by two methods, both involving the change of the Martian seasons. The first method relates the formation of the polar icecaps to ice crystals carried from place to place by Martian winds. Part of these crystals thaw on the day side, freeze at night, and either fall to the surface or remain in the atmosphere. The size of the ice crystals and their time of formation is computed, and the results show that crystals with radii $\sim 10\mu$ could remain suspended, but that those with radii = 10μ would quickly fall to the surface. The quantity of solid water in the polar icecaps is computed by the second method which relates the mean quantity of ice crystals per unit area of the icecap to the heats of fusion and evaporation of these

crystals for various temperatures. The thickness of the snow layer is then computed for the various seasonal changes noted in the polar icecap. The quantity of crystals and the evaporation energy are found to diminish as the time required for thawing decreases. The probable average thickness of the Martian snow layer is 0.01 0.01 g/cm^2, and the total amount of water in a winter polar cap is about 2×10^{15} g.

Astrophysics

AIRGLOW, GEGENSCHEIN, ZODIACAL LIGHT: REVIEW OF SOVIET LITERATURE FOR THE PERIOD 1959-1962 (PRELIMINARY). 22 Oct 62 [53]p. 116 refs.
AID rept. 62-162; AD-287 263.
Order from OTS or SLA $5.60 63-13053

DESCRIPTORS: *Scientific reports, *Bibliography, *Zodiacal light, Meteorology, Astronomical data, Atmosphere, Twilight, Clouds, Sky, Sun, Light, Electrophotography, Astronomy.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 51. 15 Jan 63, 34p.
JPRS: 17147.
Order from OTS $16.00/year 61-11147-51
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 52. 31 Jan 63, 38p.
JPRS: 17414.
Order from OTS $16.00/year 61-11147-52
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, *Oceanology, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Babii, V. I. and Sukhovei, A. G.
TRIPLEX RADIO INTERFEROMETER (Stroennyi Radiointerferometr). [1962] [4]p. 5 refs.
Available on loan from SLA 63-10510

Trans. of #Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1962, v. 5, no. 4, p. 799-801.

DESCRIPTORS: *Radio astronomy, Radio equipment, *Radio interferometers, Antennas, Radio receivers, Phase modulation, Recording devices, Circuits.

Chistyakov, V. F.
ON THE DEPTH OF THE SUNSPOTS, tr. by P. A. Kazakov. [1962] 4p. 9 refs. [CSIRO] 5759.
Order from OTS or SLA $1.10 62-23720

Trans. of Astronomicheskii Tsirkulyar (USSR) 1960, no. 215, p. 11-15.

DESCRIPTORS: *Sunspots, Solar disturbances, Astronomical data.

Kalachev, P. D., Karachun, A. M. and others.
THE RADIOTELESCOPE OF THE PHYSICS INSTITUTE OF THE ACADEMY OF SCIENCE OF THE USSR WITH A 22-METER PARABOLIC REFLECTOR [AND] INVESTIGATION OF CERTAIN ELECTRICAL PARAMETERS OF THE ANTENNA OF THE 22-METER RADIOTELESCOPE OF THE FIAS USSR. 8 July 61 [30]p. 14 refs. USASIA Trans. Log. no. 1176.
Order from OTS or SLA $2.60 62-32665

Trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 3, p. 422-436.
Other translations are available from OTS or SLA $1.60 as 62-24874, DSIR NLL M. 4830 [1962] [15]p.; and of p. 422-429 from OTS or SLA $1.60 as 62-24410, MCL-1086, 19 Sep 61 [13]p.

DESCRIPTORS: Mobile, *Telescopes, Design, Reflectors, Parabolic bodies, Antennas, *Parabolic antennas, Antenna radiation patterns, Electrical properties, Radio astronomy, Radio equipment.

For abstract see Technical Translations 8: 5, 1962.

Kopylov, I. M.
THE EQUIVALENT WIDTHS OF ABSORPTION LINES IN THE SPECTRA OF 109 05-B7 STARS (Ekvivalentnye Shiriny Linii Poglosheheniya v Spektrakh 109 Zvezd 05-B7). July 62 [34]p. 22 refs. RTS 2063.
Order from OTS or SLA $3.60 62-32476

Trans. of [Akademiya Nauk SSSR]. Krymskaya Astrofizichesjaya Observatorii, Izvestia, 1958, v. 20, p. 123-155
DESCRIPTORS: *Stars, *Absorption spectra, Spectrographic data, Astrophysics.

Kopylov, I. M.
A TWO DIMENSIONAL QUANTITATIVE SPECTRAL CLASSIFICATION OF 238 05-B7 STARS AND THE CONSTRUCTION OF A SPECTRAL-TYPE-ABSOLUTE MAGNITUDE DIAGRAM (Dvumernaya Kolichestvennaya Spektralnaya Klassifikatsiya 238 Zvezd 05-B7 i Postroenie Diagrammy Spektr-Absolyutnaya Velichina). Sep 62 [62]p. 59 refs. RTS 2064.
Order from OTS or SLA $6.60 62-32951

Trans. of [Akademiya Nauk SSSR]. Krymskaya Astro-[fizicheskaya] Observatoriya. Izvestiya, 1958, v. 20, p. 156-206.

DESCRIPTORS: *Stars, Classification, Standards, Spectra (Visible and Ultraviolet), Astronomical data.

Markov, A. B.
THE MOON: A RUSSIAN VIEW, tr. ed. by Francis J. Heyden. 1962, 391p.
Order from Chicago U. Press, 5750 Ellis Ave., Chicago 37, Ill. $8.00

Trans. of mono. [Luna, Moscow, 1960, 384p.].

DESCRIPTORS: Astronomy, *Moon, Motion, Structural properties, Physical properties, *Astronomical geodesics.

Vitkevich, V. V.
WIDE-BAND RADIO INTERFEROMETER [Shirokopolosnyi Radiointerferometr]. [1962] 6p. 1 ref.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R2. When supply exhausted, order from OTS or SLA $1.10. 63-10191

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 91, no. 6, p. 1301-1303.
Other translations are available from SLA as R-3624 and from OTS $0.50 as 62-11611, MDF V-109 [1961] 4p.

DESCRIPTORS: *Radio astronomy, Radio equipment, *Radio interferometers, Broadband, Radiofrequency spectroscopy, Radio interference, Mathematical analysis.

In radio-astronomy, as a rule, sources which have rather broad radiation spectra are dealt with. It is possible to utilize this circumstance for the creation of a receiving apparatus with large resolving power, based on a new principle--the principle of the utilization of a broad receiving spectrum. By considerably broadening the band of the receiving apparatus, it is possible to obtain the result that, with a change of difference in path of only a few wavelengths, interference is completely eliminated. A wide-band radio-interferometer of this kind will create interference reception only in the range of a very narrow angle, defined by a difference of path of a few wavelengths, which ensures the large resolving power of the system. The quantitative aspect of the question are examined.

Wurm, Karl.
ON THE MAGNITUDE OF THE SELECTIVE RADIATION PRESSURE ON THE MOLECULES IN THE TAIL OF COMETS. [1962] 8p. 6 refs.
Order from SLA $1.10 62-16686

Trans. of Zeit[schrift] für Astrophysik (Germany) 1935, v. 10, p. 285-290.

DESCRIPTORS: *Solar radiation, Pressure, *Comets, Molecular structure, Astrophysics.

Yamamoto, Takeo.
SUNSPOT-CLIMATIC RELATIONSHIPS IN FLUCTUATIONS OF GLACIERS IN THE ALPS AND ATMOSPHERIC PRECIPITATION IN KOREA, ed. by E. R. Hope. Mar 61 [18]p. 6 refs.
Order from NRCC

Pre-publication copy of article later pub. in [Kisho Shushi] (Japan) 1961 [ser. 2] v. 39 [no. 5, p. 269-281].
Also available from OTS $1.60 as AD-266 474.

DESCRIPTORS: Sunspots, Climatic factors, *Glaciers, Mountains, Europe, *Precipitation, Atmosphere, Korea, Diurnal variations.

An attempt is made to examine the sunspot-climate relationship on the basis of long-term variations of climate in Europe and Asia which have been recorded continuously for more than two centuries. (Author)

Zigel', F.
LIFE IN A METEORITE. 28 Jan 63, 7p. JPRS:17326.
Order from OTS $0.50 63-21001

Trans. of Ogonek (USSR) 1962 [v. 40] no. 47, p. 28-29.

DESCRIPTORS: *Meteorites, *Space biology, Space environmental conditions, Mars.

BEHAVIORAL SCIENCES

Leont'ev, A. N. and Panov, D. Yu.
THE PSYCHOLOGY OF MAN AND TECHNICAL PROGRESS. 29 Jan 63, 23p. JPRS: 17357.
Order from OTS $0.75 63-21013

Trans. of Voprosy Filosofii (USSR) 1962 [v. 16] no. 8, p. 50-62.

DESCRIPTORS: *Psychology, Man, Physiology, Brain, Models (Simulations), Simulation, Nervous system, Industrial psychology, *Human engineering, *Automation, Pattern recognition, Theory, *Genetics, Artificial intelligence.

Personnel and Training

BIOGRAPHIES OF SOVIET SCIENTISTS. 15 Jan 63 [128]p. JPRS: 17129.
Order from OTS or SLA $10.10 63-15118

Trans. of 33 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Geology, Medicine, Pharmacology, Chemistry, Microbiology, Mechanics, Embryology, Zoology, Space flight.

Contents:
U. M. Akhmedsafin, A. B. Aleksanyan, M. G. Anan'ev, S. V. Anichkov, A. E. Arbuzov, I. I. Buyakas, E. I. Chaika, A. V. Dzhorbenadze, Ya. P. Frumkin, S. F. Kal'fa, N. N. Kalmykov, A. M. Kirkhenshtein, V. I. Konstantinov, L. F. Larionov, A. V. Lebedenskii, A. F. Lepukal'n, M. Martsinkyavichyus, V. Malyanovskii, Ya. K. Muminov, I. A. Piontkovskii, F. Y. Roze, O. I. Shershevskaya, O. A. Sheinberg, L. N. Sretenskii, I. D. Strashun, P. G. Svetlov, F. A. Tsander, I. K. Volozhinskii, E. Ya. Vyrenkov, B. G. Egorov, I. S. Eliglashvili, E. D. Zabludovskaya, A. D. Zurabashvili.

NEW HUNGARIAN DOCTORS AND CANDIDATES. 12 May 61 [5]p. JPRS: 4605.
Order from OTS or SLA $1.10 62-19197

Trans. of Magyar Tudomany (Hungary) 1961 [v. 6(68)] no. 1, p. 59-60.

DESCRIPTORS: *Scientific personnel, Personnel, Hungary.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 64 (BIOLOGY AND MEDICINE SERIES). 31 Jan 63 [27]p. JPRS: 17394.
Order from OTS $0.75 63-21027

Consists of abstracts of articles from the scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, Bibliography, Biology, *Medicine, *Veterinary medicine, *Epidemiology, Biochemistry, Pharmacology, Anatomy, Parasitology, Gynecology, Pediatrics, Pathology, Microbiology.

Fradkin, S. Z.
EXPERIMENTAL PHYSIOLOGICAL AND HISTOCHEMICAL STUDY OF THE ADAPTATION OF INTESTINAL TRANSPLANTS INCORPORATED IN THE URINARY SYSTEM. 29 Jan 63, 20p. 24 refs. JPRS: 17349.
Order from OTS $0.75 63-21007

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 8, p. 103-109.

DESCRIPTORS: Physiology, Cytochemistry, Adaptation (Physiology), *Tissues (Biology), *Gastrointestinal system, *Transplantation, *Urinary tract, Surgery.

In ileo- and sigmoidocystoplasty, monotypical changes in the course of certain histophysiological processes connected with mucopolysaccharide metabolism in the tissues of the transplants and the urinary bladder occur. The nature and extent of such reactions make it possible to indicate advantages of sigmoid intestine in replacing part of the urinary bladder in comparison with iliac intestine. The differences described, as well as the different cystometric characteristics, are conditioned by physiological peculiarities of small and large intestine. (Author)

Palfray, L. and others.
TOBACCO AND ITS PERFUME. [1962] 5p.
Order from K-H $6.25 K-H 5773 b

Trans. of Industrie de la Parfumerie (France) 1947, v. 2, p. 83-84.

DESCRIPTORS: *Tobacco, Odors, Smokes, Cigarettes.

Sakharov, P. P.
THE INHERITANCE OF ACQUIRED CHARACTERS IN ANIMALS (Die Vererbung Erworbener Eigenschaften bei Tieren) (Nasledovanie Priobretennykh Prizhyakov u Zhivotnykh). [1961] [76]p. (German text included) 76 refs. TL1232; [DSIR NLL] M2133.
Order from OTS or SLA $7.60 62-25671

Trans. of a German trans. of Zoologicheskii Zhurnal (USSR) 1949 [v. 28] no. 1, p. 7-38 (pub. in Sowjetwissenschaft. Naturwissenschaftliche Beitrage (West Germany) 1949 [v. 2] no. 3, p. 113-149).

DESCRIPTORS: *Genetics, *Animals, *Conditioned reflex, Behavior, Learning, Mutations, Biology, Psychology.

Anatomy and Physiology

[REVIEWS OF ARTICLES WRITTEN BY A. TSCHERMAK]. [1961] 37p.]
Available on loan from SLA 61-10963

A collection of 14 reviews from Berichte über die Gesamte Biologie, Abt. B: Berichte über die Gesamte Physiologie und Experimentelle Pharmakologie (Germany); Zentralblatt für die Gesamte Ophthalmologie und ihre Grenzgebiete (Germany); Pflüger's Archiv für die Gesamte Physiologie des Menschen und der Tiere (Germany); and mono. Abderhalden's Handbuch des Biologischen Arbetismethoden, Abt. V, Teil 6, heft 10, Berlin/Wien, 1937.

DESCRIPTORS: *Vision, *Optics, *Optical instruments, Light, Optic nerve, *Sensory perception, *Space perception, Spectroscopy, *Color vision, *Eye, Physiology, Retina, Motion, Diffraction.

Aganyants, E. K. and Pokrovskii, V. M.
SCIENTIFIC CONVENTIONS AND CONFERENCES: CONFERENCE OF PHYSIOLOGISTS OF SOUTHERN RSFSR (NO. 14) KRASNODAR, 4-8 JUNE 62. 30 Jan 63, 6p. JPRS: 17385.
Order from OTS $0.50 63-21022

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 12, p. 1523-1525.

DESCRIPTORS: Scientific personnel, Scientific organizations, *Conferences, *Physiology, Pathology, Cytochemistry, Neurology.

Kirtschev, K., Rajnov, A., and Michailov, St.
ELECTRIC SLEEP IN LABORATORY ANIMALS (Elektroschlaf bei Versuchstieren). [1962] 4p.
Order from SLA $1.10 62-18776

Trans. of Deut[sche] Gesundheitsw[esen] (East Germany) 1960, v. 15, 25 Aug, p. 1724-1726.

DESCRIPTORS: *Electrosleep, *Laboratory animals, Sleep, Bioelectronics, Reaction (Psychology), Nervous system, *Analyzers (Psychology), *Proprioception, Conditioned reflex, Stimulation, Skin.

The electric impulses of direct current of rectangular form, of low frequency per second (20 and low intensity (50-100 microamperes) produce a distinct sleeping effect. Sleep begins mostly within the first minutes after the start of the experiment and lasts on the average 30 to 120 minutes under the effect of the current. After disconnection of the current sleep lasts for approximately another 30 minutes. During the electric sleep a decrease of reactivity of the nervous system, respectively of the skin analyzers and the proprioceptive part of the analyzers in the organism is observed. (Author)

Shmeleva, N. I., Agadzhanyan, N. A., and Mansurov, A. R.
DISTURBANCE IN THE REACTIONS OF THE HEMATOPOIETIC SYSTEM AT LATE POSTIRRATIATION PERIODS [AND] THE EFFECT OF OXYGEN DEFICIENCY AND PROLONGED RADIAL ACCELERATIONS ON THE ORGANISMS OF ANIMALS. 13 Nov 62 [20]p. 25 refs. FTD-TT-62-823.
Order from OTS or SLA $1.60 63-13898

Unedited rough draft trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1962, v. 53, no. 4, p. 38-46.
Another trans. of (p. 42-46) is available from OTS or SLA $1.10 as 62-33107, JPRS-15346, 19 Sep 62 [9]p.

DESCRIPTORS: Nuclear particles, Radiobiology, Adaptation (Physiology), *Radiation sickness, Antigens and antibodies, Bone marrow, Stimulation, Proteins, Leukocytes, Injection (Medicine), Reticuloendothelial system, *Hemopoietic system, Spleen, *Aviation medicine, *Anoxia, *Acceleration tolerance, Respiration, Blood circulation, *Oxygen, Acceleration.

Solopaev, B. P.
CORRELATION BETWEEN THE INTENSITY OF REGENERATION OF PARENCHYMATOUS ELEMENTS AND THE STATE OF CONNECTIVE TISSUE. 6 Nov62 [9]p. 26 refs. JPRS: 16040.
Order from OTS or SLA $1.10 62-33716

Trans. of Akademiya Nauk Gruzinskoi SSR [Tiflis]. Soobshcheniya, 1962, v. 29, no. 1, p. 101-106.

DESCRIPTORS: *Regeneration, *Epithelium, Tissues (Biology), *Liver, Surgery, Glands.

Yusupov, K. Yu.
COMPARATIVE EVALUATION OF VARIOUS BEVERAGES DURING PROLONGED OBSERVATION UNDER NONWORKING CONDITIONS. 18 Jan 63 [21]p. JPRS: 17186.
Order from OTS or SLA $2.60 63-15122

Trans. of mono. Novoe Pit'evoe Sredstvo dlya Rabochikh v Usloviyakh Vysokikh Temperatur (A New Drink for those Working Under High-Temperature Conditions) Tashkent, 1961, p. 160-175.

DESCRIPTORS: Industrial medicine, Physiology, *Water *Metabolism, Adaptation, (Physiology), Heat tolerance, *Body fluids, Sodium compounds, Chlorides, *Beverages

Research, undertaken to evaluate different beverages after prolonged observation both under plant working conditions and in a hospital, revealed some peculiarities of water-salt metabolism, tissue hydrophilia, and changes in indices of hemodynamics. We feel justified on the basis of it in recommending cherry water as a new beverage for workers in hot shops because it is superior to salted water in several respects. (Author)

Biochemistry

METHOD FOR THE PRODUCTION OF 1-GLUTAMIC ACID BY FERMENTATION. [1962] 9p. 6 refs.
Order from OTS or SLA $1.10 62-18869

Trans. of German patent 1,111,583, 27 July 61, S 65878 IVa/6b, submitted 18 Nov 59, by Shionogi & Co. Ltd., Japan (Priority: Japan, Nov 58).

DESCRIPTORS: Production, *Glutamic acid, *Fermentation, *Bacteria, Biochemistry.

Ashkinazi, M. S., Dolidze, I. A., and Karpitskaya, V. E.
STABLE PRODUCTS OF PHEOPHYTIN PHOTOREDUCTION. [1962] [6]p. 10 refs.
Order from OTS or SLA $1.10 62-18635

Trans. of #Biofizika (USSR) 1961, v. 6 [no. 3] p. 294-299.

DESCRIPTORS: *Stability, *Pheophytins, *Photosynthesis, Decomposition, Alcohols, Acetone, Ascorbic acid, Formic acids, *Reduction, Chlorophylls, Organic solvents.

The action of red light quanta on alcohol and acetone solutions of pheophytin, containing added ascorbic acid, led to the production of an extremely stable, blue colored, photoreduced form of the pigment, which after the addition of hydrogen or zinc ions goes over to the red reduced form. In formic acid under these same conditions, the red photoreduced form of the pigment is formed immediately. (Author)

Boichenko, E. A. and Saenko, G. N.
ENZYMATIC PHOTOREDUCTION OF CARBON MONOXIDE. [1962] [3]p. 14 refs.
Order from OTS or SLA $1.10 62-18631

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138 [no. 6] p. 1453-1455.

DESCRIPTORS: *Enzymes, *Photochemical reactions, Oxidation-reduction reactions, *Carbon compounds, *Monoxides, Catalysis, Iron, Catalysts, Colorimetric analysis.

Chernomorskii, S. A.
THE ACTION OF ULTRAVIOLET LIGHT ON THE EXTRACTION OF CHLOROPHYLL FROM LEAVES WITH PETROLEUM ETHER. [1962] [3]p. 20 refs.
Order from OTS or SLA $1.10 62-18636

Trans. of #Biofizika (USSR) 1961, v. 6 [no. 2] p. 242-243.

DESCRIPTORS: *Ultraviolet radiation, *Photosynthesis, *Chlorophylls, Plant pigments, Petroleum, Ethers, *Radiation effects.

The extractability of chlorophyll by petroleum ether from leaves in which the entirety of the chlorophyll complex was broken by the use of ultraviolet was studied. From the leaves of two plant species the chlorophyll was almost entirely unextractable with petroleum ether. For the explanation of this fact we can assume either the presence of a certain form of chlorophyll, or the absence of an influence of ultraviolet. In the controls, with a few exceptions, extractability of the chlorophyll with petroleum ether was absent. The data obtained are found in agreement with the assumption of the existence in the living leaf of two forms of chlorophyll. (Author)

Erokhin, Yu. E. and Krasnovskii, A. A.
LUMINESCENCE SPECTRA OF PHOTOREDUCED FORMS OF CHLOROPHYLL, ITS DERIVATIVES AND ANALOGS. [1962] [10]p. 14 refs.
Order from OTS or SLA $1.10 62-18634

Trans. of #Biofizika (USSR) 1961, v. 6 [no. 4] p. 392-402.

DESCRIPTORS: Luminescence, Fluorescence, *Plant pigments, *Photosynthesis, *Spectrographic analysis, Chromatographic analysis, Pheophytins, Porphyrins, Chlorophylls, Biosynthesis, *Molecular structure.

The luminescence spectra of the photoreduced forms of chlorophyll, its analoga and derivatives were measured. Characteristic spectra were observed in photoreduced chlorophylls a and b, pheophytin, bacterioviridin and hematoporphyrin. Characteristic fluorescence in the photoreduced forms of protochlorophyll, bacteriochlorophyll, and the first photoreduced form of pheophytin was not detected. It is supposed that the presence of an additional unpaired electron in the conjugated bond system of the pigment molecule leads to a shortening of the life time of the excited state. (Author)

Evstigneev, V. B. and Gavrilova, V. A.
THE ABILITY OF ARTIFICIAL LIPOPROTEID-CHLOROPHYLL COMPLEX TO SENSITIZE REDOX REACTIONS. [1962] [10]p. 28 refs.
Order from OTS or SLA $1.10 62-18632

Trans. of #Biofizika (USSR) 1961, v. 6, [no. 5] p. 563-571.

DESCRIPTORS: Lipoproteins, *Chlorophylls, Photosynthesis, *Sensitivity, *Oxidation-reduction reactions, Ascorbic acid, Methyl red, Absorption.

A study was made of the influence of the presence of adsorbates of chlorophyll and some of its analogs on yolk granule lipoproteids in redox reactions between ascorbic acid and methyl red in aqueous solution during illumination. It was established that such adsorbates have a clearly expressed sensitizing action on the indicated reaction. The preparation of yolk granule suspensions and the deposition of pigment on them was described and the influence of chlorophyll concentration on the reaction rate. A short consideration of the possible mechanism of the sensitizing action of chlorophyll in similar systems was presented. (Author)

Evstigneev, V. B. and Savkina, L. G.
THE PHOTOREDUCTION OF CHLOROPHYLL AND ITS ANALOGS IN DIFFERENT SOLVENTS, MEASURED BY ELECTRICAL CONDUCTIVITY. [1962] [12]p. 30 refs.
Order from OTS or SLA $1.60 62-18633

Trans. of #Biofizika (USSR) 1961, v. 6 [no. 1] p. 30-39.

DESCRIPTORS: *Photochemical reactions, *Chlorophylls, Photosynthesis, *Organic solvents, *Conductivity, Plant pigments, Pyridines, Pheophytins, Oxidation-reduction reactions.

A study was made of the change in electrical conductivity of solutions of chlorophyll and some of its analogs in different solvents with illumination in the presence of phenylhydrazine as the reductant. The appearance of considerable photoconductivity for pyridine solutions of all the pigments studied was confirmed. The absence of changes in electrical conductivity with illumination of pigment solutions in toluene and acetone was established. Photoconductivity appeared for ether solutions of all the pigments studied, and for methanolic solutions of the pheophytins. An attempt is made to explain the difference in behavior of pigments in different solvents as the result of differences in the dark interactions of molecules of pigment, reductant, and solvent. Experimental data are presented that confirm an important role of the primary reduced form of the pigment in the mechanism of photosensitization of redox reactions by chlorophyll and its analogs. (Author)

Krasnovskii, A. A., Bystrova, M. I., and Sorokina, A. D.
FRACTIONATION OF DIFFERENT FORMS OF PIGMENTS IN HOMOGENATES OF ETIOLATED OR ILLUMINATED LEAVES. [1962] [5]p. 15 refs.
Order from OTS or SLA $1.10 62-18629

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136 [no. 5] p. 1227-1230.

DESCRIPTORS: Fractionation, *Plant pigments, Plants, *Chlorophyls, Fluorescence, *Chromatographic analysis.

The active form of protochlorophyll ("form 655") and freshly formed chlorophyll ("form 690") in homogenates of etiolated and illuminated leaves are bound with heavier cell structures than is the little active form of protochlorophyll ("form 635"). The data obtained give evidence in favor of the assumption that the "active form" with a fluorescence maximum at 655 mμ belongs to a protein-lipide compound of protochlorophyllide, while the little active form with a maximum at 635 mμ probably belongs to a mixture of protochlorophyll and protochlorophyllide. The initial form of chlorophyll with a maximum at 690 mμ seemingly belongs to an unesterified product, while "form 680" appears to be "ordinary" chlorophyll. (Author)

Krasnovskii, A. A. and Pakshina, E. V.
REVERSIBLE PHOTOREDUCTION OF BACTERIOCHLOROPHYLL AND ITS PARTICIPATION IN PHOTOCHEMICAL ELECTRON TRANSFER. [1962] [5]p. 10 refs.
Order from OTS or SLA $1.10 62-18625

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 135 [no. 5] p. 1258-1261.

DESCRIPTORS: *Chlorophylls, *Bacteria, *Photochemistry, Electron transitions, *Photosynthesis, *Phosphorylation, Synthesis, Plant pigments, Models (Simulation).

These experiments made in model systems indicate the possible path of participation of the cofactors of photosynthetic phosphorylation in a chain of electron transfer reactions, sensitized by a pigment system. (Author)

Litvin, F. F., Krasnovskii, A. A., and Rikhireva, G. T.
THE FLUORESCENCE OF DIFFERENT FORMS OF CHLOROPHYLL IN LEAVES. [1962] [5]p. 9 refs.
Order from OTS or SLA $1.10 62-18626

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 135 [no. 6] p. 1528-1531.

DESCRIPTORS: *Flourescence, *Chlorophylls, *Plants (Botany), Production, *Temperature, Spectroscopy.

It was found in this work that the different forms of chlorophyll in plant leaves have fluorescence spectra with different structures at room- and low-temperature. This makes it possible to study the change in forms during the production and accumulation of chlorophyll in plants. (Author)

Pinus, E. A. and Sisakyan, N. M.
ON THE NATURE OF THE INHIBITING EFFECT OF MITOCHONDRIA UPON GLYCOLYSIS (O Prirode Tormozyashchego Vliyaniya Mitokhondrii na Glikoliz) tr. by Sergey Shewchuck. Mar 62, 16p. (Foreign text included) 12 refs.
Order from OTS or SLA $1.60 UCRL Trans-815

Trans. of #Biokhimiya (USSR) 1961, v. 26, no. 6, p. 1090-1094.

DESCRIPTORS: Inhibition, *Microsomes, *Glycolysis, Liver, *Cells (Biology), Nucleotides, Adenosine phosphates, Enzymes, Phosphorus transferases, Fructose, Adenine derivatives, Biochemistry, Cytochemistry.

Liver mitochondria as well as their fragments obtained by means of ultrasonic destruction of the mitochondria, inhibit the isolated phosphofructokinase reaction measured by the spectrophotometric enzyme method. The inhibition can only be noted at low ATP concentrations. Whereas, increase in the ATP concentration in experiments with the entire glycolytic system removes the inhibitory effect of the mitochondria upon glycolysis. It may thus be suggested that the mitochondrial control of glycolysis is effected through a change in the concentration of the adenine nucleotides. (Author)

Putseiko, E. K. and Terenin, A. N.
PHOTOELECTRIC SENSITIVITY OF CRYSTALLINE CHLOROPHYLL AND GREEN LEAF PIGMENTS. [1962] [5]p. 13 refs.
Order from OTS or SLA $1.10 62-18628

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136 [no. 5] p. 1223-1226.

DESCRIPTORS: *Photosensitivity, *Photoconductivity, Chlorophylls, Plant pigments, Carotinoids, *Lipoproteins.

Savkina, I. G. and Evstigneev, V. B.
COMPARISON OF THE PHOTOSENSITIZING ACTIVITIES OF CHLOROPHYLLS a AND b IN SOLUTION. [1962] [5]p. 12 refs.
Order from OTS or SLA $1.10 62-18630

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138 [no. 4] p. 958-961.

DESCRIPTORS: *Photosensitivity, *Chlorophylls, Solutions, Photosynthesis, Photochemical reactions, Pyridines, *Organic solvents.

The experimental results of this work favors the hypothesis of the accessory photochemical role of chlorophyll b in relation to chlorophyll a in the photosensitization of photosynthesis. (Author)

Serebrovskaya, K. B. and Oparin, A. I.
A COACERVATE SYSTEM INVOLVING RNA AND CHLOROPHYLL. [1962] [5]p. 16 refs.
Order from OTS or SLA $1.10 62-18627

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 135 [no. 6] p. 1532-1535.

DESCRIPTORS: *Colloids, *Chlorophyll, *Nucleic acids, Desoxyribonucleic acids, *Ribonucleic acids, *Plant pigments, Flouresence, Spectroscopy, Serum albumin, Solutions.

By mixing RNA with chlorophyll in the dry state, the latter acquires the capacity to dissolve in water and in salt solutions. The spectrum of the RNA-chlorophyll complex obtained differs strongly from the spectra of true and colloidal solutions of the pigment. The absorption maximum is shifted to the long-wave side, close to that of the chlorophyll spectrum in chloroplasts. Chlorophyll from the compound with RNA can be transferred to organic solvents only after a preliminary treatment with ascorbic acid or pyridine. The chlorophyll-RNA complex is completely deprived of the fluorescence characteristic for the original chlorophyll. The chlorophyll-RNA complex in mixture with serum albumen and potassium oleate forms a coacervate, differing in its properties from the original solution. It shows a weak fluorescence, and the pigment is not extracted from it by organic solvents, even after treatment with ascorbic acid. (Author)

Süssenguth, Karl.
COMPOUNDS WITH ISOPRENE CHAINS AND THEIR FORMATION IN THE PLANT. [1962] 14p.
Order from K-H $17.50 K-H 5227

Trans. of Botanisches Archiv (Germany) 1940, v. 41, p. 159-167.

DESCRIPTORS: *Isoprene, Molebules, *Plants, Biosynthesis.

Truhaut, R. and Clercq, M. de.
FIRST RESULTS OF THE CHEMICAL AND BIOLOGICAL STUDY OF THE PRODUCTS OBTAINED IN THE PYROLYSIS OF NICOTINE. [1962] 23p.
Order from K-H $28.75 K-H 8346 b

Trans. of Bulletin du Cancer [sic] 1957, v. 44, no. 3, p. 426-439.

DESCRIPTORS: *Nicotine, Cigarettes, Tobacco, *Pyrolysis, Biochemistry.

Tsiperovich, O. S. and Loseva, A. L.
ROLE OF AMINO GROUPS IN THE MACROSTRUCTURE OF PROTEIN. [1962] [13]p. 28 refs.
Order from OTS or SLA $1.60 62-33270

Trans. of Ukrayns'kyi Biokhimichnyi Zhurnal (USSR) 1960 [v. 32] no. 4, p. 491-506.

DESCRIPTORS: *Amines, *Molecular structure, Proteins, *Plasma proteins, Biochemisty, Trypsin, Trypsinogen, Egg white.

Botany

Freudenberg, Karl, Reznik, Hans and others.
INVESTIGATION ON THE FORMATION OF LIGNIN AND OF WOOD. [1962] 14p. (figs. omitted) 6 refs.
Order from SLA $1.60 62-18333

Trans. of die Naturwissenschaften (West Germany) 1955, v. 42, no. 2, p. 29-35

DESCRIPTORS: *Lignin, Wood, Trees, *Biosynthesis, Glycosidases, Glucosides, Botany, Labelled substances, Biochemistry, *Cells (Biology), *Tracer studies.

Tissue undergoing lignification contains a cell-attached beta-glucosidase. It breaks down the glucoside D coniferin occurring there into glucose and coniferyl alcohol, which then is transformed into lignin by the likewise present red-oxases. Radioactive D coniferin and D gluclvanillin was administered to young spruces. In botl cases the radioactive substance was incorporated within a few days into the cells undergoing lignification at the time of the experiment. Unlike the D glucosides, the L glucosides were not modified by the plant. The experiments with radioactive coniferin confirm the concepts about the process of lignification obtained by chemical and microscopic means. (Author)

Guseva, K. A.
PHYTOPLANKTON OF THE RYBINSK RESERVOIR (SEASONAL DYNAMICS AND DISTRIBUTION OF THE BASIC GROUPS OF PHYTOPLANKTON) (Fitoplankton Rybinskogo Vodokhranilishcha (Sezonnaya Dinamika i Raspredelenie Ego Osnovnykh Grupp)) tr. by V. Topchy. 1962, 26p. 7 refs. NRCC Technical trans. 1043.
Order from NRCC $1.50 NRCC C-4098

Trans. of Biologicheskaya Stantsii "Borok". Trudy (USSR) 1955, v. 2, p. 5-23.

DESCRIPTORS: *Lakes, *Ecology, *Plankton, Plants, *Algae, Distribution, Dynamics, Growth, Periodic variations.

Lebedenko, L. A.
SOME FEATURES OF THE ONTOGENY OF ROOT AND STEM-WOOD IN SWEET CHESTNUT (O Nekotorykh Zakonomernostyakh Ontogeneza Drevesiny Kornya i Stvola u Kashtana Sodobnogo). Sep 62 [9]p. 11 refs. RTS 2138.
Order from OTS or SLA $1.10 62-32959

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Biologicheskii (USSR) 1961, v. [36] (66) no. 4, p. 66-71.

DESCRIPTORS: *Trees, *Wood, Production, Growth, Morphology.

Mashkovtsev, M. F.
EFFECT OF SOIL MOISTURE ON THE ACCUMULATION OF NICOTINE IN TOBACCO PLANTS. [1962] 11p.
Order from OTS or SLA $1.60 62-18835

Trans. of Vsesoyuzn[yi] Nauch[no]-Issled[ovatel'skii] Inst[itut] Tab[aka] i Makhorki. Sborn[ik Nauchno-Issledovatel'skikh Rabot] (USSR) 1960, v. 151, p. 83-89.

DESCRIPTORS: Soils, *Moisture, *Nicotine, *Tobacco, Plants, Growth.

Medical Specialties and Equipment

Polemann, G.
ANIMAL EXPERIMENTAL INVESTIGATIONS ON THE BIOLOGICAL COMPATIBILITY OF SILICONE RUBBER. [1962] 5p. 12 refs.
Order from SLA $1.10 62-18392

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: Animals, *Silicones, Elastomers, *Rubber, *Medical equipment, Adaptation (Physiology), Tissues (Biology), *Toxicity, Cancer, Etiology.

Rusznyak, Istvan.
MEDICAL SCIENCE IN HUNGARY. 14 Jan 63 [11]p. JPRS: 17132.
Order from OTS or SLA $1.60 63-15090

Trans. of Orvosi Hetilap (Hungary) 1962, v. 103, no. 39, p. 1851-1854.

DESCRIPTORS: *Medicine, History, Medical research, Medical personnel, Education, *Scientific organizations, Hungary.

At the request of the Soviet Academy of Medical Sciences, in 1961 Academician Dr. Istvan Rusznyak, president of the Hungarian Academy of Sciences (Magyar Tudomanyos Akademia), delivered a detailed lecture in which he informed the presidium of the Soviet Academy of Medical Sciences about the development and present state of medical science in Hungary. The abridged text of the lecture is presented, on the basis of the original article that was published in Vyestnik AMN SSSR (Hungarians editors note).

Microbiology

Ashmarin, I. P., Vorontsov, I. V. and others.
ISOLATION, PURIFICATION, AND CERTAIN PROPERTIES OF THE TYPE B CL. BOTULINUM PROTEINASE. 16 Jan 63 [12]p. 16 refs. JPRS: 17160.
Order from OTS or SLA $1.60 63-15111

Trans. of #Biokhimiya (USSR) 1962, v. 27, no. 5, p. 788-793.

DESCRIPTORS: *Clostridium botulinum, Growth, Bacterial toxins, *Culture media, Purification, *Proteases, Calcium, *Bacterial toxins, Enzymes.

The object of the investigation was the proteinase of a comparatively high proteolytic strain No. 175 of Cl. botulinum B., most active at pH levels of 6.0 to 8.(and apparently related to extracellular proteinases. (Author)

Taig, M. M., Budaya, S. M., and Solovieva, N. K.
CULTURES OF THE ACTINOMYCETES OF THE ACTINOPLANACEAE FAMILY. 3 Aug 62 [10]p. (figs. refs. omitted).
Order from OTS or SLA $1.10 62-18749

Trans. of #Antibiotiki (USSR) 1962 [v. 7] no. 6, p. 483-491.

DESCRIPTORS: *Actinomycetes, Growth, *Spores, Culture media, Antibiotics, *Bacteriostatic substances, Identification.

Zech, H.
MORPHOLOGICAL AND CYTOCHEMICAL OBSERVATIONS OF PROTOPLASMS OF NICOTIANA TABACUM INOCCULATED WITH TOBACCO MOSAIC VIRUS. [1962] 7p.
Order from K-H $8.75 K-H 3225 j

Trans. of Experimental Cell Research (U. S.) 1954, v. 6, no. 2, p. 560-562.

DESCRIPTORS: Morphology, Cytochemistry, Cells (Biology), *Tobacco, Plants, *Tobacco mosaic virus.

Pathology

MEDICAL DEVELOPMENTS IN NORTH VIETNAM. 14 Jan 63 [83]p. JPRS: 17106.
Order from OTS or SLA $8.10 63-15098

Trans. of Y Hoc Viet Nam, 1962, no. 2, p. 11-18, 30-37, 62-73, 78-87 and Y Hoc Thuc Hanh (Vietnam) 1962, no. 85, p. 5-8.

DESCRIPTORS: *Medical research, *Vietnam, Storage, *Penicillin, *Drugs, Iodine compounds, Peptic ulcers, *Venereal diseases, Therapy, *Surgery, *Lungs, *Encephalitis, Chinese traditional medicine.

Contents:
Research on the keeping of penicillin in the tropical climate of North Vietnam, by Dang Hanh Khoi and others
Iodosoja, a new organic iodine drug, by Thruong Cong Quyan and others
Some characteristics of stomach and duodenum ulcers and inflammations (discovered through one year of work in the X-ray department of the army hospital X) by Tran Quang and others
Results of the anti-prostitution fight in Vietnam, by Dang Vu Hy
Surgical treatment of 48 cases of alien objects in the lungs; a study of the lung surgery branch of the army hospital #108, by La Cao Dai and Le Quang Trung
Combination of western and eastern medicines for the treatment of encephalitis, by Nguyan Huu Thuvst.

Konchev, K. L., Knyazeva, E. N., Shura-Bura, B. L. and others.
GLYCERINE STERILIZATION OF NEEDLES AND INSTRUMENTS; FEATURES PECULIAR TO THE COURSE OF COMBINED BRUCELLOSIS AND Q-RICKETTSIOSIS IN GUINEA PIGS; A METHOD OF CONTROLLING SURFACE DISINFECTION (Sterilizatsiya Igl i Instrumentariya pri Pomoshchi Glitserina; Izuchenie Osobennostei Techeniya Smeshannoi Infektsii Brutselleza i Ku-rikketsioza v Organizme Morskoi Svinki; K Voprosu o Metodike Kontrolya Dezinfektsii Poverkhnostei) tr. by A. E. 18 Sep 62, 9p. 5 refs. I-5016 A-D.
Order from OTS $0.50 63-11552

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 7, p. 114-116, 125-130, 134.

DESCRIPTORS: *Glycerine, *Disinfectants, *Surgical instruments, *Brucellosis, *Rickettsia, Diseases, Surfaces, *Decontamination, Microorganisms, Viability, Temperature.

Loehr, Berthold and Wagner, A.
RELATION TO TYPE AND LOCALIZATION OF BRONCHIAL CARCINOMAS TO PULMONARY VENTILATION AND CHANGES ... [1962] 22p.
Order from K-H $27.50 K-H 5009 d

Trans. of Langenbecks Archiv fllr Klinische Chirurgie, Vereinigt mit Deutsche Zeitschrift fllr Chirurgie (West Germany) 1955, v. 280, p. 592-608.

DESCRIPTORS: *Lungs, *Cancer, Ventilation.

Malyshkin, N. P.
THE SIGNIFICANCE OF PHONO-, VECTOR- AND BALLISTOCARDIOGRAPHY IN THE COMPLEX INVESTIGATION OF MITRAL LESIONS OF THE HEART. 17 Jan 63 [7]p. 8 refs. JPRS: 17171.
Order from OTS or SLA $1.10 63-15121

Trans. of Kardiologiya (USSR) 1962, v. 2, no. 5, p. 69-70.

DESCRIPTORS: *Pathology, *Heart, *Diagnosis, *Electrocardiography, Ballistocardiography, Vectorcardiology, Sound.

Results are presented of combined studies of 58 patients with mitral lesions. It is concluded that combined studies which yield interdependent findings are of great importance in the diagnostic investigation of lesions of the heart, and have definite advantages over individual studies, especially in cases in which, for one or another reason, a number of the typical traits of predominant stenosis in the mitral valve are lost.

Pietrantoni, Luigi.
OBSERVATION ON 325 CASES. CLINICAL AND BRONCHOSCOPIC ASPECTS OF BRONCHOGENIC CANCER. [1962] 49p.
Order from K-H $71.25 K-H 5436 b

Trans. of Medicina (Italy) 1955, v. 5, no. 3, p. 245-284

DESCRIPTORS: *Cancer, *Lungs, Medical examination.

Rabkin, I. Kh.
RADIOLOGICAL DIAGNOSIS OF ANEURYSM IN THE PULMONARY ARTERY. [1962] [11]p. 13 refs.
FASEB manuscript no. S 72-2.
Available from OTS on loan 63-15166

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1962, v. 37, no. 1, p. 29-32.

DESCRIPTORS: *X-rays, Diagnosis, *Diseases, *Arteries, *Lungs, Kymography.

Schonberg, S.
SUDDEN DEATH FROM EXCESSIVE SMOKING OF CIGARETTES. [1962] 8p.
Order from K-H $10.00 K-H 3510 f

Trans. of Deut[sche] Zeit[schrift für die] Ges[amte] Gericht[liche] Med[izin] (Germany) 1935, v. 24, p. 401-405.

DESCRIPTORS: *Cigarettes, Tobacco, Smokes, Toxicity.

Uher, V.
CONCERNING TOBACCO (CHEMISTRY AND PHYSIOPATHOLOGY). [1962] 23p.
Order from K-H $28.75 K-H 2986 b

Trans. of Lekarske Listy (Czechoslovakia) 1953, v. 8, 15 Nov, p. 523-526.

DESCRIPTORS: *Tobacco, Smokes, Cigarettes, Chemistry, Physiology, *Pathology.

Verstraete, M.
SMOKING, SYMPATHECTOMY AND PERIPHERAL ARTERIOLAR INSUFFICIENCY. [1962] 12p.
Order from K-H $15.00 K-H 9440 b

Trans. of Belgisch Tijdschrift voor Geneeskunde, 1959, v. 15, no. 8, p. 383-389.

DESCRIPTORS: Smokes, Cigarettes, *Tobacco, *Surgery, *Autonomic nervous system, *Blood circulation, Arteries.

Pharmacology and Toxicology

PROCESS FOR PREPARATION OF 3-HYDROXY-N-METHYL-7-AZAD-N-MORPHINAN. 4 Juli 1962, 1p. (foreign text included). 7368/61 Japan.
Order from INT $5.40

Trans. of Japanese patent 7368/61 by Tanabe Drug Mfg. Co., filed 5 Dec. 1957, publ. 12 June 1961.

DESCRIPTORS: *Morphine, Methyl radicals, Azo radicals, Synthesis.

Borisenkova, R. V.
EXPERIMENTAL STUDY OF THE ACTION OF FERROSILICON DUST ON THE ORGANISM. [1962] 6p.
Order from OTS or SLA $1.10 62-18767

Trans. of Gigiena i Sanitariya (USSR) 1954 [v. 19] no. 5, p. 23-26.

DESCRIPTORS: *Toxicity, *Iron alloys, *Silicon, Particles, Industrial medicine, *Oxides, Pathology, Lungs, Aerosols, Air, Contamination.

A study of the working conditions in plants producing and using ferroalloys demonstrated that in these plants aerosols of ferrosilicon are released. The dust particles were less than 4 μ in size. Experimental studies on the comparative toxicity of dusts of ferrosilicon and ferric oxide after intratracheal administration demonstrated that a considerable difference exists in the action of these 2 kinds of dust. After administration of ferrosilicon, the lungs showed a permanent chronic interstitial process thickening of the alveolar walls due to the growth of new connective tissue, with complete disappearance of the alveolar structure, deformation of vessels and bronchi. Ferric oxide caused the development of a moderately pronounced interstitial process with thickening of the alveolar walls. This provides a basis for considering ferrosilicon dust as possessing more pronounced pathogenic action than iron dust and for establishing limits of allowable concentrations of this substance in the air of industrial plants. (Author)

Borisenkova, R. V.
THE TOXICITY OF DUSTS PRODUCED BY MANGANESE ALLOYS. [1962] 8p.
Order from OTS or SLA $1.10 62-18777

Trans. of Gigiena i Sanitariya (USSR) 1954 [v. 19] no. 1, p. 24-29.

DESCRIPTORS: *Toxicity, Particles, *Manganese alloys, *Iron compounds, Industrial medicine, Atmosphere, Contamination, Silicon alloys, Aerosols, Particles.

Experimental-toxicologic studies permit the conclusion that dust of alloys containing manganese (ferromanganese and silicomanganese) exert a toxic effect on the organism. The toxicity of ferromanganese dust is higher than that of silicomanganese. (Author)

Buhr, Gustav.
THE EFFECT OF ISOPROPYL CHLORIDE ANESTHESIA UPON THE DYNAMIC OF THE HUMAN HEART AND CIRCULATION. [1962] [15]p. 21 refs.
Order from SLA $1.60 62-18952

Trans. of der Anaesthesist (Germany) 1953, v. 2, no. 5, p. 180-183.

DESCRIPTORS: Propanes, *Chlorides, Anesthesia, *Anesthetics, *Toxicity, Heart, Cardiovascular system, Blood pressure, Heart, *Propyl radicals.

Multiple circulation checks were carried out on twelve patients during isopropyl chloride anesthesia, using physical circulation analyses and determination of the time of tension and expulsion of the heart. During the short-time anesthesia the strain in the circulation was insignificant: the blood pressure variations were only small; there was, almost without exception, a moderate increase in the volume per minute and the cardiac activity, improvement of the cardiac dynamics and a slight decrease of the peripheral resistance. When the anesthesia extended beyond eight to ten minutes, an increasing depression of the circulation became noticeable. Attention is called to the potentially dangerous effects of isopropyl chloride overdosage upon the circulation of older patients with primary cardiac and arterial damage. (Author)

Bukin, Yu. V.
ON THE CONVULSIVE AND LETHAL ACTION OF VITAMIN B_6 ANTAGONISTS (TOXOPYRIMIDINE AND ISONICOTINYL HYDRAZIDE). [1962] [10]p. 18 refs.
Order from OTS or SLA $1.10 62-25113

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1960, v. 32 [no. 1] p. 67-76.

DESCRIPTORS: *Convulsions, *Poisoning, Inhibition, *Vitamin B complex, *Pyrimidines, Toxicity, *Isoniazid, Drugs, Glutamic acid, Arginine.

When rats are intoxicated with toxopyridimine, the administration of pyridoxal, even in the latest stages of intoxication, suppresses convulsions and prevents the lethal outcome of the intoxication. In contrast to toxopyridimine intoxication, acute intoxication of rats by isonicotinyl hydrazide cannot be suppressed or eliminated by the administration of pyridoxal. Intoxication induced by toxopyridimine or isonicotinyl hydrazide cannot be suppressed by the administration of L-glutamic acid or L-arginine to the animal. Both the toxic action of toxopyridimine and the protective action of pyridoxal appear quickly after subarachnoidal injection of extremely small amounts of these substances. Sensitivity of rats to toxopyridimine, whether injected subarachnoidally or subcutaneously, is increased many times when the rats are kept on a diet devoid of vitamin B_6. When injected subarachnoidally, neither L-glutamic acid nor γ-aminobutyric acid prevents the lethal intoxication of rats by toxopyridimine and isonicotinyl hydrzide, although γ-aminobutyric acid suppresses the motoric reactions of rats (convulsions) to intoxication, which is apparently related to the general inhibitory action of -aminobutyric acid on the central nervous system. (Author)

Danishevskii, S. L.
EFFECT OF DICHLOROETHANE AND CARBON TETRACHLORIDE ON THE LEVEL OF PHOSPHATASE ACTIVITY IN THE BLOOD. Report to the Annual Scientific Conference of the Leningrad Sanitary-Hygienic Medical Institute, 7 May 57. [1962] [9]p. 9 refs.
Order from OTS or SLA $1.10 62-25404

Trans. of Sanit[arno]-Gigien[icheskii] Med[itsinskii] Inst[itut]. Trudy (USSR) 1958, v. 44, p. 155-163.

DESCRIPTORS: *Ethanes, *Chlorides, *Carbon tetrachlorides, *Toxicity, Poisons, Deterioration, Liver, Kidneys, Inhibition, *Phosphatases.

Dichloroethane and carbon tetrachloride inactivate the alkaline phosphatase of blood in experiments in vitro. Inhalation of dichloroethane and carbon tetrachloride vapor as a rule lowers the alkaline phosphatase content of blood, both in single and in repeated intoxications. Subcutaneous injection of dichloroethane and carbon tetrachloride likewise lowers the phosphatase activity of blood. The quantitative changes in the alkaline phosphatase content of the blood produced by the action of dichloroethane and carbon tetrachloride vary over a wide range. Fatty dystrophy of the liver and kidneys was found in rabbits that had succumbed to intoxication by dichloroethane or carbon tetrachloride. No relationship was found between the concentration (dose), which determines the severity of intoxication, and phosphatase activity of the blood. The level of phosphatase activity apparently is only one of the signs of intoxication, but it cannot be used for evaluating the action of the substance on the organism. (Author)

Martinez, Matias and Salas, Eduardo A.
USE OF A NEW TRANQUILIZING AGENT: 5-(o-METHOXYPHENOXY)-METHYL-2-OXAZOLIDONE. [1961] 7p. 16 refs.
Order from SLA $1.10 62-16229

Trans. of Semana Med[ica] (Argentina) 1960, v. 117, p. 1142-1147.
Another trans. is available from ATS $13.40 as ATS-55N51SP [1961] 7p.

DESCRIPTORS: *Tranquilizing drugs, Argentina, Medical research, Drugs, Methyl radicals, Alkoxy, Phenoxy radicals, Oxazolidones.

Mkheyan, V. E.
EFFECT OF DICHLOROBUTENE UPON SOME INDEXES OF CARBOHYDRATE METABOLISM, THE MORPHOLOGICAL COMPOSITION OF THE PERIPHERAL BLOOD, AND VARIOUS ORGANS IN ANIMALS WHEN THE TOXIN ACTS BY INHALATION OR UPON THE SKIN. [1962] [10]p. 3 refs.
Order from OTS or SLA $1.10 62-25112

Trans. of Akademiya Nauk Armyanskoi SSR [Erevan], Izvestiya. Biologicheskie [i Sel'skokhozyaistvennye] Nauki, 1959, v. 12, no. 3, p. 85-93.

DESCRIPTORS: *Chlorides, Butenes, *Carbohydrates, *Metabolism, Morphology, Blood, Animals, *Inhalation, Skin, Poisonous gases, Poisons, Industrial production, *Synthetic rubber, *Toxicity, Blood chemistry, Leukocytes.

Müller, Rudolf and Moldenhauer, Walter.
A SIMPLIFIED METHOD FOR THE ADSORPTION OF THE NICOTINE IN THE SIDE STREAM SMOKE OF CIGARETTES. Sep 60, 21p.
Order from K-H $26.25 K-H 10281 d

Trans. from [Institut für Tabakforschung. Berichte] (East Germany) 1959, v. 6, no. 2.

DESCRIPTORS: *Cigarettes, Tobacco, Smokes, *Nicotine, *Adsorption, Toxicity.

Myasnikov, A. L., ed.
SLEEP THERAPY. [1961] [29]p. 2 refs.
Order from OTS or SLA $2.60 62-10710

Trans. of mono. Proceedings of the enlarged session of the Presidium of the Academy of Medical Sciences of the USSR with the participation of the Ryazan Medical Institute im. I. P. Pavlova, 27-28 Feb 53, Moscow, 1954, p. [1]-12, 26-27, 46-61, 114-115, 215-219.

DESCRIPTORS: *Sleep, *Therapy, Inhibition, Cerebral cortex, *Hypnotics and sedatives, Hydrates, Acetaldehydes, Chlorides, Pentothal sodium, *Psychoses, Drugs, *CNS depressants, Bioelectronics, Brain, Conferences.

Contents:
Introductory speech, by A. I. Nesterov
Introductory speech, by A. G. Ivanov-Smolensky
On the character of cortical inhibition during artificial sleep, by V. F. Shiroky
Comparative characteristics of sleep induced by chloral hydrate, and sodium amytal, by G. A. Ponomarev
Therapeutic sleep in the psychiatric clinic, by I. V. Strelchuk
Materials for the application of sleep therapy in the clinic of nervous diseases, by A. I. Aleksandrova and E. C. Prokhorova
Decision of the enlarged session of the Presidium of the Academy of Medical Sciences of the USSR with the participation of the Ryazan Medical Institute imeni I. P. Pavlov on problems of "Sleep Therapy in the Laboratory and the Clinic" (February 27-28, 1953 at Ryazan).

Rasina, L. G.
THE EFFECT OF CORTISONE ACETATE UPON TRANSAMINASE ACTIVITY IN THE TISSUES OF RABBITS. [1962] [11]p. 17 refs.
Order from OTS or SLA $1.60 62-25114

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1960, v. 6 [no. 2] p. 136-145.

DESCRIPTORS: *Corticosteroids, *Transaminases, *Tissues (Biology), Rabbits, *Liver, *Thymus gland, Muscles, Drugs, Enzymes, *Lymphatic system.

Administration of cortisone to rabbits induces an increase in the weight of the liver and a decrease in the weight of the thymus gland, the lymphatic glands below the knee, and the muscles in the calf of the leg. The dry weight of the thymus gland is increased in animals that have received cortisone. There is no change in the dry weight of the liver or muscles. The action of cortisone causes an increase of 21 - 85.5% in the total activity of glutamate-alanine transaminase and of 69.9-118% in that of glutamate-aspartate transaminase. The total activity of both enzymes is diminished in the thymus gland and lymphatic nodes. In the thymus gland, the activity of glutamate-alanine transaminase drops 13.2 - 62% and that of glutamate-alanine drops 25 - 71.5%. In the lymphatic nodes, the drop in the activity of the first enzyme totals 42 - 53%, and in that of the second 35 - 51%. In muscle, the total activity of glutamate-aspartate transaminase drops 14%, whereas there is no appreciable change in the activity of glutamate-alanine transaminase. Injection of cortisone lowers the activity of glutamate-alanine and glutamate-aspartate transaminases in the thymus gland, and lowers the activity of glutamate-aspartate transaminase in the lymphatic nodes. Administration of the hormone for 3 to 7 days caused no change in the activity of either enzyme in liver or muscle tissue; its administration for 13 to 14 days reduced the activity of glutamate-alanine transaminase in the liver. (Author)

Saruz, Henry.
OPHTHALMOLOGICAL COMPLICATIONS OF TOBACCO INTOXICATION. [1962] 17p.
Order from K-H $21.25 K-H 3730

Trans. of France Médicale, 1954, v. 17, no. 11, p. 23-26.

DESCRIPTORS: *Tobacco, Smokes, Cigarettes, Pathology, *Eye, *Toxicity.

Tyunov, L. A., Vasil'ev, G. A., and Paribok, V. P.
RADIATION PROTECTION HANDBOOK. Oct 6, 255p. refs.
Order from OTS $3.50 AEC-tr-5241

Trans. of mono. Protivoluchevye Sredstva (Spravochnik) Moscow, 1961 [172p.].

DESCRIPTIONS: Radiobiology, Handbooks, Dosage, *Radioprotective drugs, Diseases, *Radiation effects, Inhibition, Pharmacology, *Drugs.

This manual contains data relating to more than 500 preparations tested as radioprotective agents on various species of animals, plants, microorganisms, or other material. The substances are arranged in alphabetical order. Unless otherwise indicated the word "irradiation" or "exposure" means exposure to x-rays. The position of a preparation with several synonyms depends on its principal name. At the end of the book there is a general subject index giving the names and synonyms in alphabetical order. An author index is also provided. Information on the combined administration of several radioprotective substances and clinical evaluations of some protective substances are given in separate tables. (Author)

Vincent, D. and Segonzac, G.
THE EFFECT OF HEXAMETHONIUM ON THE TOXICITY OF NICOTINE. [1962] 5p.
Order from K-H $6.25 K-H 5709 c

Trans. of Société de Pharmacie de Bordeaux. Bulletin (France) 1955, v. 94, spec. no., p. 193-195.

DESCRIPTORS: Pharmacology, *Drugs, *Hexonium, *Toxicity, *Nicotine.

Radiobiology

Abdullin, G. Z.
STUDY OF COMPARATIVE RADIOSENSITIVITY OF DIFFERENT PARTS OF BRAIN IN TERMS OF ALTERED FUNCTION. (Izuchenie Sravnitel'noi Radiochuvstvitel'nosti Raznykh Otdelov Golovnogo Mozga po Izmeneniyu Ikh Fuktsii). [1962] [14]p. 21 refs.
Order from OTS or SLA $1.60 AEC-tr-5141

Trans. of mono. Symposium on the Effects of Ionizing Radiation on the Nervous System, Vienna, 5-9 June 61. Proceedings, Vienna, 1962, p. 397-408.

DESCRIPTORS: *Radiation tolerance, *Brain, Pathology, *Nervous system, *Radiation effects, Autonomic nervous system, Radiation injuries, Radiobiology.

Results obtained show that ionizing radiations operate selectively on different nerve formations. In experiments with pigeons it was established that the functions which change more easily and quickly under the effect of radiation are chiefly those activated by mesencephalic formations. Motor-food conditioned reflexes in rabbits are affected by radiation. This effect is accompanied by a reduction in unconditioned food reactions and other disturbances of vegetative functions and hence is of a secondary character. Cardiac and, in particular, respiratory conditioned reflexes in rabbits are distinctly manifested even when there are pronounced changes in the background frequency of heart contractions and respiratory movements due to x-irradiation of the head.

Benevolenskii, V. N.
RADIATION INJURY AND AUTOLYSIS. 8 Feb 61 [34]p. 110 refs. JPRS: 4387.
Order from OTS or SLA $3.60 61-21126

Trans. of *Uspekhi Sovremennoy Biologii (USSR) 1960, v. 50, no. [3] 6, p. 310-321.

DESCRIPTORS: Radiation injuries, Tissues (Biology), *Cells, (Biology), Pathology, *Necrosis, Cytochemistry, *Radiation sickness, Radiobiology.

Dubinin, N. P.
PROBLEMS OF RADIATION GENETICS. Nov 62, 511p. 886 refs.
Order from OTS $6.00 AEC-tr-5376

Trans. of mono. Problemy Radiatsionnoi Genetiki, Moscow, 1961 [468]p.

DESCRIPTORS: *Genetics, *Radiation effects, *Cells (Biology), *Chromosomes, Mitosis, *Mutations, Congential anomalies, Animals, *Mammals, *Plants, *Microorganism, *Viruses, Ionizing radiation, Ultraviolet radiation, Radiation hazards.

Contents:
Structural, physical and chemical bases of heredity
The physical nature of the biological action of radiation
The effect of ionizing radiation on heredity of animals, plants, microorganisms and viruses
The action of ultraviolet rays on heredity of plants, animals, microorganisms and viruses
Radiogenetic effect of visible light
Radiation genetics of mammals
Ionizing radiation and human heredity
Radiation selection of plants and microorganisms.

Egyazarov, G. M.
THE EFFECT OF LOW DOSES OF GAMMA-RAYS ON THE PRESERVATION OF VITAMINS IN FOOD PRODUCTS, tr. by H. Asher. Oct 61 [9]p. 7 refs. AERE Trans 882.
Order from OTS or SLA $1.10 62-25401

Trans. of Voprosy Pitaniya (USSR) 1960, v. 19, no. 4, p. 54-58.

DESCRIPTORS: *Gamma rays, *Foods, *Preservation, *Vitamins, Radiobiology, Carotene.

The degree of destruction to which are exposed vitamins A, B_1, B_2, C, E, PP and carotin under the effect of low doses of ionizing radiation differs according to the type of the vitamin and the nature of the vitamin-bearing product. A fairly high proportion of destroyed vitamin E has been noted in cow's milk, butter and sunflower seed oil, while that of carotin was the highest in the beef fat. With the gamma-ray dosage of the order of 50,000 r accumulation of ascorbic acid could be registered in some foodstuffs (potatoes, carrots) and of thiamine in others (buckwheat and pearl barley). The radiosynthesis thus noted is, apparently, a result of a defensive reaction on the part of the vegetable tissue to the action of high-energy radiation. (Author)

Lebedinskii, A. V. and Moskalev, Yu. I.
BIOLOGICAL EFFECTS OF RADIATION AND PROBLEMS OF RADIOACTIVE ISOTOPE DISTRIBUTION. Oct 62, 187p. 316 refs.
Order from OTS $2.75 AEC-tr-5265

Trans. of mono. Biologicheskoe Deistvie Radiatsii i Voprosy Raspredeleniya Radioaktivnykh Izotopov, Moscow, 1961.
A partial trans. (p. 9-28, 49-54, 119-127) is available from OTS or SLA as 62-19766, JPRS-12704, 27 Feb 62 [44]p.

DESCRIPTORS: *Radiation effects, Biology, *Radioactive isotopes, Distribution, *Nucleoproteins *Nucleic acids, Metabolic products, *Tissues (Biology), Metabolism, Rabbits, *Circulatory system, Blood, Dogs, *Bone marrow, *Radiation sickness, Therapy, *Strontium, Dose rate, Sheep, Calcium, Nutrition, *Milk, *Fission products, Excretion, *Erythrocytes, Rats, *Cerium, *Plutonium, *Bone, Age factors, Minerals, Nitrogen, *Liver, Autoradiography, Morphology, *Sex glands, Histology, Pathology, Peritoneum, Plutonium compounds, Acetates, Radiobiology.

Contents:
Certain changes in the nucleoproteins, nucleic acids, and their metabolic products, caused by ionizing radiation, by T. N. Rysina
The influence of prolonged daily irradiation on the nucleic acid metabolism in certain tissues of the rabbit, by R. E. Libinzon and V. V. Konstantinova
Changes in the blood system of rabbits after frequently

repeated external gamma-irradiation, by L. V. Bogatov and N. A. Koshurnikova

Investigation of the functional state of the blood system in dogs in the long-term periods after chronic influence of ionizing radiation, by L. V. Bogatov and Z. I. Kalmykova

The influence of the period of introduction of bone marrow suspensions for the therapy of acute radiation sickness, by S. A. Rogacheva

Experimental substantiation of the maximum permissible levels of the content and entry of strontium-90 into the organism, by Yu. I. Moskalev

The behavior of long-lived radioisotopes in the ewe Organism after prolonged peroral entry of the radioisotopes, by L. A. Buldakov

The biological influence of certain long-lived radioisotopes in the case of their prolonged enteral entry into the ewe organism, by L. A. Buldakov

Problems of the migration of radioactive strontium in the organisms of pregnant cows, by N. I. Burov

Influence of the level of calcium nutrition of lactating cows on the elimination of radioactive fission products with the milk, by B. N. Annenkov

The toxicological action of strontium-90 on the erythrocytes in rats, by Z. I. Kalmykova

The behavior of cerium-144 in the rat organism after inhalation, by E. R. Lyuchanskii

The distribution and elimination of plutonium in dogs in the long-term periods after introduction, by T. N. Rysina and R. A. Erokhin

Change in the mineral exchange and nitrogen content in the bone tissue of rats as a function of age, by N. I. Elkina

The distribution of plutonium in the liver and bones according to the data of histoautoradiography, by V. K. Lemberg and others

The dynamics of the morphological changes in the livers of rabbits under the influence of plutonium-239, by A. P. Nifatov

The dynamics of the changes in the bone tissue of rabbits poisoned by plutonium-239, by Z. M. Bukhtoyarova

The histopathology of the sex glands of rabbits under the action of incorporated plutonium, by N. A. Koshurnikova

The long-term effects of intraperitoneal introduction of plutonium acetate, by A. P. Nifatov

Possible ways of influencing the elimination of plutonium from the animal organism, by Yu. A. Belyaev.

Litvinov, N. N.
LATE CHANGES IN THE OSSEOUS SYSTEM OF DOGS IN RADIOACTIVE STRONTIUM AFFECTION. 16 Jan 63 [9]p. 15 refs. JPRS: 17161.
Order from OTS or SLA $1.10 63-15083

Trans. of Arkhiv Patologii (USSR) 1962 [v. 24] no. 11, p. 23-28.

DESCRIPTORS: *Bones, Pathology, Dogs, Radiobiology, *Radiation effects, Radioactive isotopes, Strontium, *Regeneration, Absorption, Diseases.

In dogs during the latter stages of Sr^{90} affection, profound changes of the osseous system develop. The basic pathological processes should be considered the dystrophic changes and the impairment of osteogenesis and normal reorganization of osseous tissue. The most important and characteristic feature of skeletal changes is the impairment of the processes of osteogenesis. The changes in the processes of osteogenesis should be regarded primarily as disturbances in regeneration of the bone. The impairment of the reorganization (resorption and new growth) of osseous tissue is manifested in the altered rhythm of bone reorganization and in the impairment of normal correlations between the processes of resorption and apposition of the bone. In their characteristics these changes of the osseous system in Sr^{90} affection are most closely analogous to diseases of the osseous system such as: deforming ostosis (Paget's disease), fibrous osteodysplasia, and parathyroid osteodystrophy.

Pasichnyk, A. M.
VARIATION OF MICROOGRANISMS UNDER THE INFLUENCE OF IONIZING RADIATION (Minlyvist' Mikroorganizmiv pid Vplyvom Ionizuyuchykh Vypromin-yuvan'). 9 Dec 60 [14]p. 55 refs. JPRS: 7263.
Order from OTS or SLA $1.60 61-11633

Trans. of Mikrobiologichnyi Zhurnal (USSR) 1960, v. 22, no. 3, p. 69-74.
Another trans. is available from OTS or SLA $1.60 as 61-11073, JPRS-7123, 16 Nov 60, 18p.

DESCRIPTORS: Microorganisms, *Bacteria, Morphology, Ionization, *Radiation effects, Mutations, *Genetics, *Metabolism, Virulence.

Zawadowski, Witold.
THE EFFECT OF IONIZING RADIATIONS ON THE HUMAN ORGANISM [Dzialanie Promieniowan Jonizujacych na Ustroj Ludzki]. 3 Nov 60 [11]p. JPRS: 6175.
Order from OTS or SLA $1.60 60-31880

Trans. of Polski Tygodnik Lekarski, 1960, v. 15, no. 8, p. 3-15 (pt. 1 of article continued in no. 9, under another title).

DESCRIPTORS: Radiobiology, *Radiation effects, Ionization, *Radiation sickness, Children, *Growth, *Aging, Tissues (Biology), Reproductive system, Genetics, Dosage, Cancer.

A discussion of radiation effects includes the following topics: radiation disease; local damage in an acute or semi-acute form, resulting from ionizing radiation: chronic damage resulting from prolonged action of repeated small doses; local harmful effects on children and young people, which manifest themselves as a disturbance or retardation of the regular development and growth of certain tissues or organs; radiation effects which accelerate the aging process; cancer-causing effects; damage of hereditary traits.

Zawadowski, W[itold].
PROBLEM OF RADIOLOGICAL PROTECTION [Zagadnienie Ochrany Radiologicznej]. 17 June 60 [14]p. 3 refs. JPRS: 3418.
Order from OTS or SLA $1.60 60-31290

Trans. of Polski Tygodnik Lekarski, 1960 [v. 15] no. 9, p. 326-330 (second pt. of article which began in no. 8 under another title).

DESCRIPTORS: Radiobiology, *Genetics, *Radiation effects, Ionization, X-rays, Medical personnel, Dosage, *Inhibition, *Reproductive system.

Recommendations are made for practical application by the Polish Ministry of Health in order to advance the matter of radiological protection. (See also 60-31880)

Zoology

OCEAN PERCH FISHING IN THE BERING SEA (Za Okunem v Beringovo More) tr. by Milan A. Kravanja. 1 June 62. [3]p.
Order from OTS or SLA $1.10 62-32124

Trans. of Rybnoe Khozyaistvo (USSR) 1961, v. 37, no. 12, p. 53-57.

DESCRIPTORS: *Perch, *Bering Sea, Fisheries.

Baranenkova, A. S.
THE RESULTS OF SURVEYS OF YOUNG COD AND HADDOCK IN THE BARENTS SEA DURING THE PERIOD 1946-59. 1961 [14]p. (figs. omitted) 7 refs. [DSIR NLL] M. 3478.
Order from OTS or SLA $1.60 62-23949

Trans. of mono. [Sovetskie Rybo Khozyaistvennye Issledovaniya v Moryakh Evropeiskogo Severa] (Soviet Fisheries Investigations in North European Seas) Moscow, 1960, p. 267-275.

DESCRIPTORS: Analysis, *Cod, *Barents Sea, *Fishes, Growth, Age, Marine biology.

Berg, R. L.
STERILITY MUTATIONS IN DROSOPHILA MELANOGASTER. 1. DISTRIBUTION OF STERILITY MUTATIONS IN THE CHROMOSOMES OF DROSOPHILA MELANOGASTER. [1962] 24p. 41 refs.
Order from OTS or SLA $2.60 AEC-tr-5051

Trans. of Leningradskoe Obshchestvo Estestvoispytatelei. Trudy (USSR) 1938, v. 67, no. 4, p. 96-108.

DESCRIPTORS: *Mutations, *Reproduction, Sex, *Drosophilia, Chromosomes, Genetics, X-rays, *Inhibition.

Ivlev, V. S.
METHOD OF ESTIMATING THE FOOD UTILIZED BY GROWING FISH (Bestimmungsmethode der von dem Wachsenden Fisch Ausgenutzten Futtermengen) tr. by S. D. Gerking. 1961, 10p. 12 refs. FRBC Trans. Series no. 374.
Order from NRCC

Trans. of Zeitschrift für Fischerei und deren Hilfswissenschaften (Germany) 1960, n.s. v. 9, no. 3/4, p. 281-289.

DESCRIPTORS: *Fishes, *Food, Growth, Reproduction, Metabolism, Mathematical prediction.

The systematic evaluation of the comprehensive material obtained during the last years enabled the author to establish some general regularities, by the application of which the exact determination of the food quantity utilized by fish and the marking of losses caused by metabolism were made possible. The present paper describes the corresponding method in two variants by the example of young salmonidae. The equations applied by the author proved to be absolutely suitable for the purposes of practical fish breeding. The main advantage of this method is its simplicity and that no special experiments will be necessary. The calculations are based on the values of "standard metabolism" which were obtained from fish living practically motionless; under natural living conditions fish move more or less actively increasing the metabolism. It is to be hoped that in most cases a standard value can be found for this correction. (Author)

Lipanov, V. G. and Shestopalov, P. I.
BERING SEA HERRING AND THE PROSPECTS FOR ITS EXPLOITATION (Beringovonorskaya Sel'd i Perspektivy Ee Promysla) tr. by Milan A. Kravanja. 1 June 62 [3]p.
Order from OTS or SLA $1.10 62-32127

Partial trans. of Rybnoe Khozyaistvo (USSR) 1961, v. 37, no. 11, p. 45-47.

DESCRIPTORS: *Bering Sea, *Herring, Fisheries, Echo ranging.

Rozhkov, A. S.
BIOLOGY OF A TACHINID MASICERA ZIMINI KOL; A PARASITE OF THE SIBERIAN SILKWORM MOTH. 29 June 61 [6]p. 3 refs. JPRS: 8526.
Order from OTS or SLA $1.10 61-27059

Trans. of Zoologicheskii Zhurnal (USSR) [1961] v. 40, no. 1, p. 60.

DESCRIPTORS: Insects, *Parasites, *Insect control, Ecology, *Moths, Silkworms, *Diptera, Morphology.

Svetovidov, A. N.
CONTRIBUTION TO THE CLASSIFICATION OF THE NEEDLEFISHES (BELONE BELONE (L.) PISCES, BELONIDAE)) K SISTIMATIKA SARGANA (BELONE BELONE (L.) (PISCES, BELONIDAE)) tr. by Laurence Penny. [1961] 4p.
Order from OTS or SLA $1.10 62-23305

Trans. of Akademiya Nauk SSSR. Zoologicheskii Institut. Trudy, 1955, v. 18, p. 343-345.

DESCRIPTORS: *Fishes, Morphology, Classification, Distribution.

CHEMISTRY

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE] 1943, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 7p. 10 refs.
Order from OTS or SLA $1.10 62-16789

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1943, no. 1, p. 43-65, 74-76.

DESCRIPTORS: *Abstracts, *Chemistry, *Acetylene derivatives, *Vinyl radicals, Bromides, Hydrogen compounds, Synthesis, Isomerization, Ketones, *Catalysis, *Nitro radical, *Alloys, Magnesium, Antimony, Petroleum.

Contents:
Acetylene derivatives. XXX. Action of hydrogen bromide on dimethylvinylethynylcarbinol, by I. N. Nazarov and Ya. M. Yanbikov
Acetylene derivatives. XXXI. Synthesis of tetrahydro-γ-pyrones by isomerization of vinylethynylcarbinols and by hydration of divinyl ketones by I. N. Nazarov and others
Catalytic reduction of aromatic nitro compounds, II, by A. A. Strel'tsova and N. D. Zelinskii
Pyrophoric properties of alloys of manganese with antimony, by N. V. Ageev and Ya. S. Makarov
Formation of rubber in Kok-Sagyz, by A. A. Drobkov.

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE] 1943, NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 5p. 9 refs.
Order from OTS or SLA $1.10 62-16788

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1943, no. 2, p. 99-107, 129-144.
##A complete trans. of p. 99-107 is available from Fulmer Research Inst., Ltd., Stoke-Poges, Buckinghamshire, Eng. as FRI no. 31.

DESCRIPTORS: *Abstracts, Petroleum, Aging (Materials), *Aluminum alloys, *Acetylene derivatives, *Vinyl radical, Ketones, *Anilines, Carboxylic acids, Chemistry.
Contents:
##Aging of alloys of aluminum with zinc and lithium, by T. A. Badaeva and F. I. Shamrai
Acetylene derivatives. XXXII. Condensation of vinylacetylene with hydroxy ketones and tetrahydro-γ-pyrones, by I. N. Nazarov and I. V. Torgov
Interaction between dialkyl anilines and aryldicarboxylic acids, VI, by V. M. Rodionov and A. M. Fedorova.

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE] 1943, NO. 3: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 5p. 16 refs.
Order from OTS or SLA $1.10 62-16787

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1943, no. 3, p. 178-189, 206-214.

DESCRIPTORS: *Abstracts, Petroleum, Geological survey, *Radiochemistry, *Analysis, *Acetylene derivatives, *Vinyl radicals, Ketones.

Contents:
Employment of radiochemical analysis in correlation of geological strata, by S. G. Tseitlin
Acetylene derivatives. XXXIII. Conversion of divinyl ketones: addition of hydrogen chloride to β, β-dimethyldivinyl ketone, by I. N. Nazarov and T. D. Nagibina.

MANUFACTURING METHOD FOR CUPROUS ALBUMIN "CAERULOPLASMIN". 28 Sep 1962, 8p.(foreign text included). 3845/61 Japan.
Order from INT $30.50

Trans. of Japanese patent 3845/61 by Tokyo Tanabe Seiyaku Co. Ltd. & Another, Honcho, Nihombashi, Chuo-ku, Tokyo, filed 12 Nov 58.

DESCRIPTORS: *Albumins, *Copper compounds, Production.

[TRANSACTIONS (REPORTS) ON THE ACADEMY OF SCIENCES OF THE USSR] 1941, VOL. 32, NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 3p. 3 refs.
Order from OTS or SLA $1.10 62-16781

Abstract trans. of]Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941 v. 32, no. 2, p. 125-131.

DESCRIPTORS: *Abstracts, *Petroleum, *Deformation, *Crystal structures, *Surface-active substances, *Tin, *Absorption.

Contents:
Deformation of single crystals of metals facilitated by adsorption of surface-active substances, by P. Rebinder and others
Effect of glide plane orientation in single crystals of tin on their adsorption-promoted deformation, by V. I. Likhtman and P. Rebinder.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 39, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 1 ref.
Order from OTS or SLA $1.10 62-16776

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1943, v. 39, no. 1, p. 15-17, 23-25, 34-35.

DESCRIPTORS: *Abstracts, Petroleum, *Sucrose, Decomposition, Supersonics, Molecular isomerism, Dynamics, *Apatite, Geology, *Chemistry.

Contents:
Splitting of sucrose by supersonic action, by I. L. Roikh and A. S. Shtarkerman
Kinetics of consecutive reactions consisting of a bimolecular and molecular stage, by A. A. Balandin and L. S. Leibenzon
Apatities from two texture types of apatite-nepheline formations of Khibiny, by A. I. Volodchenkova and B. N. Melent'ev.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 39, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-16774

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1943, v. 39, no. 4, p. 152-163.

DESCRIPTORS: *Abstracts, *Petroleum, *Vitamin B complex, Oxidation, *Oxalic acids, *Sulfides, Water, Carbon compounds.

Contents:
Vitamin B_1: 4-methyl-5-(β-hydroxyethyl)-thiazole, by Ya. M. Slobodin and E. E. Gel'ms
Four carbon atom dibasic acids as intermediate products of biochemical oxidation of hexoses to oxalic acid, by V. S. Butkevich and A. A. Mel'nikova
Sulfide waters from the permian Polazna-Krasnokamsk anticline, by A. M. Kuznetsov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 39, NO. 6: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 3p. 1 ref.
Order from OTS or SLA $1.10 62-16773

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1943, v. 39, no. 6, p. 234-236, 239-247, 253-257.

DESCRIPTORS: *Abstracts, Petroleum, *Ultraviolet optical material, Geochemistry, *Water, *Geophysical prospecting, Rock, Permeability, *Oils, *Chemistry.

Contents:
Boric uviol glass for bacterical lamps, by V. P. Danilov and Ts. A. Ioffe
Theory of combustion, ignition and explosions, by N. S. Akulov
Geochemistry of ground waters of the Tatar Republic, by N. V. Tageeva
Structure of the porous space of carbonate rocks serving as collectors of oil and the permeability shown on the example of paleozoic reservoirs of oil in Bashkiriya, by G. I. Teodorovich.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 47, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 3p. 3 refs.
Order from OTS or SLA $1.10 62-10786

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 47, no. 4, p. 250-254 and 268-282.

DESCRIPTORS: *Abstracts, *Petroleum, *Oils, Geophysical prospecting, *Dielectrics, Dynamics, *Decomposition, Liquids, Velocity, *Explosions, *Fatty acids, Crystals, *Polymerization, *Temperature, *Coal, Combustion.
Contents:
Displacement of the oil-bearing contour, by P. Ya. Polubarinova-Kochina
Mechanism of dielectric breakdown of liquids, by V. S. Komelkov
Determination of the flow velocity of the detonation products of condensed explosives, by L. D. Landau and K. P. Stanyukovich
Interaction of hydrated fatty acid crystals with electrolytes and their polymorphism and equilibrium with monolayers, by A. A. Trapeznikov
Temperature of self-inflammation of a coal surface washed by a gas stream, by A. B. Chernyshev and L. M. Lyubinskaya.

Grubitsch, H., Geymeyer, W., and Buvik, E.
ANODIC COATINGS WITH SPECIFIC PORE SIZE. [1962] 11p. (figs. tables omitted) 21 refs.
Order from SLA $1.60 62-18221

Trans. of mono. [Internationale Leichtmetalltagung] (International Light Metals Conference) (no. 4) Leoben, 1961. [Proceedings] 1962, p. 8-14 [also pub. in Aluminium (Germany) 1961, v. 37, no. 9, p. 569-575]. A trans. of the journal title is available from SLA $1.10 as 62-18018 [1962] 7p.

DESCRIPTORS: *Electron microscopy, *Porous filters, *Aluminum compounds, Oxides, Films, Stabilization, Organic solvents, Anodes.

Kulisenko, A. Z., Botsarov, N. G. and Kuzmenko, A. S.
NEUE VERFAHREN UND AUTOMATISCHE REGELUNG DES FLOTATIONSPROZESSES (New Procedures and Automatic Regulation of the Flotation Process). (text in German).
Order from TIB $2.70

Trans. of #Koks i Khimiya (USSR) 1962, no. 3, p. 3-11.

DESCRIPTORS: *Flotation, Processing, Automation

Nowacki, Werner.
FOURIER SYNTHESIS OF CRYSTALS AND THEIR APPLICATION IN CHEMISTRY. Textbook and Monographs in the Field of the Exact Sciences: Chemical Series, vol. 6. June 1962, 261p.
Order from OTS $3.50 AEC-tr-4510

Trans. of mono. Fouriersynthese von Kristallen und ihre Anwendung in der Chemie, Basel, 1952 [250p.].

DESCRIPTORS: *Crystal structure, *Fourier analysis, Synthesis, Chemistry, Punched card method, Computers, X-ray diffraction analysis, Optical analysis, Microwaves.

Contents:
Fourier syntheses
Patterson syntheses
Harker syntheses
Buerger syntheses (implication diagrams)
Synthesis calculation aids and accessories
Optical methods of synthesis
Use of microwaves for crystal structure determination

Petrov, G. S., Danilovich, A. I., and Rabinovich, A. Yu.
OXIDATION OF MINERAL OILS WITH SOLUBLE CATALYSTS. [1961] 8p.
Order from OTS or SLA $1.10 61-18133

Trans. of Khimicheskii Institut im[eni] L. Ya. Karpova. Trudy (USSR) 1927, p. 157-168.

DESCRIPTORS: *Mineral oils, Oxidation, *Catalysts, Zinc compounds, Lead compounds, Copper compounds, Manganese compounds, Naphthyl radicals, Salts.

Solar oil distillate treated with 18% fuming sulfuric acid (without, however, completely removing the unsaturatec and washed to complete elimination of alkaline salts underwent a more extensive oxidation in the presence of manganese naphthenate than in the presence of naphthenates of zinc, lead and copper under identical conditions. Oxidation of solar, spindle and machine oil distillates and of mazut without preliminary treatment with sulfuric acid and, consequently, without removal of the unsaturated hydrocarbons contained in them, was just as successful as in the case of oils previously freed partially or completely of unsaturated hydrocarbons. The manganese salt of petroleum sulfonic acids and zinc stearate are less active as oxidation catalysts than the naphthenates of these metals. From both acid-treated and not treated oil distillates catalytic oxidation with air produces gasoline-soluble, gasoline-insoluble and volatile acids soluble in water; the oxidized oil from which the acids have been removed is more viscous than the initial charge, and combustion analysis shows the presence of oxygenated compounds in it. Vaseline, spindle and machine oils refined with fuming sulfuric acid to the extent of their ability to interact with the latter produce no acids upon oxidation without catalysts. (Author)

Samsonov, Grigorii V[alentinovich] and Paderno, Yurii B[orisovich].
BORIDES OF THE RARE EARTH METALS. Oct 62, 99p. 162 refs.
Order from OTS $2.25 AEC-tr-5264

Trans. of mono. Boridy Redkozemel'nykh Metallov, Kiev, 1961 [94]p.

DESCRIPTORS: *Refractory materials, Cathodes, Electronic equipment, *Rare earth elements, *Alkaline earth compounds, *Actinide series compounds, Scandium compounds, Yttrium compounds, *Borides, Crystal structure, Electrical properties, Thermionic emission, Physical properties, Chemical properties, Production, Alloys, Soldering.

This book discusses the physical and chemical properties of compounds of metals of sub-groups IIa and IIIa of the periodic system with boron; methods of their preparation and basic regions of use are described. The book is designed for scientific workers and engineers working in the field of cathode electronics, high-power electronic devices, as well as the synthesis of refractory compounds. (Soviet editors note)

Wranglen, Gosta.
THE REACTIVITY OF CARBON ELECTRODES AND ITS DEPENDENCE ON INORGANIC CATALYSTS AND INHIBITORS. [1962] [24]p. 91 refs.
Order from SLA $2.60 62-18289

Trans. of Jerkontorets [Stockholm]. Annaler (Sweden) 1958, v. 142, no. 10 [p. 611-637].

DESCRIPTORS: Chemical reactions, *Electrodes, *Carbon, Combustion, Inhibition, Catalysis, Alkali metal compounds, Metallic compounds, *Oxidation inhibitors, Boric acids, Fire resistant coatings, *Inorganic substances, *Catalysts.

For measuring the reactivity, a simple apparatus was used, which consisted essentially of a vertical tube furnace with a free chimney draft. Using this furnace, cylindrical specimens of carbon were burnt in air for 10 min. The results showed that alkali salts, such as Na_2CO_3, NaCl, NaF and Na_3AlF_6, and also V_2O_5 catalyse the combustion of carbon while CaF_2 and CaB_4O_7 were without effect. B_2O_3, P_2O_5, $Na_2B_4O_7$, Al_2O_3 and AlF_3 reduced the combustion rate. B_2O_3 and P_2O_5 were particularly effective inhibitors, contents of about 0.5% reducing the weight loss in the burning tests to 1/10 or less. The mechanism of the inhibitors is assumed to consist of partly a neutralization of the catalyzing metal oxides and partly a purely mechanical shielding effect. Combustion inhibitors can be used to protect carbon electrodes from oxidization either in the form of an additive to the raw materials or as an impregnant in or a surface coating on the finished electrode. The possibilities to use boric acid for this purpose are treated in some detail. Other applications of combustion inhibitors, particularly those consisting of boron or phosphorous compounds, are for example the fire-proofing of wood and textiles, fire extinguishing, impregnation of matches and candle-wicks and the mitigation of surface ignition in high octane gasolines. (Author)

Bahr, Herbert A.
NEW ORSAT APPARATUS FOR RAPID AND EXACT GAS ANALYSIS. [1962] 10p. (figs. omitted).
Available on loan from SLA 63-10485

Trans. of [GWF] das Gas- und Wasserfach (Germany) 1930, v. 73, p. 440-444.

DESCRIPTORS: *Laboratory equipment, Design, Gases, Analysis.

Cantzler, A. and Rothschild, S.
DETERMINATION OF WATER IN ORGANIC MATERIALS BY USE OF CALCIUM CARBIDE. 26 Feb 51, 16p. 25 refs.
Order from SLA $1.60 62-18932

Trans. of Z[eitschrift für] Untersuchung der Lebensmittel (Germany) 1927, v. 53, p. 425-435.

DESCRIPTORS: Determination, *Water, *Organic materials, *Calcium compounds, *Carbides, Moisture, Absorption, Laboratory equipment, Chemical analysis, *Vacuum apparatus.

The determination of moisture in organic materials by use of calcium carbide in this apparatus results in accuracy in a short time and without any objections. The analysis by use of calcium carbide also results in good results if the material to be analyzed contains ethereal oils or other volatile components as well as water. The values obtained are in agreement with those found in the vacuum apparatus when an experimentally determined factor is used. The values also agree with those found in the air or water drying cabinets. (Author)

Elinson, Samuel Vladimirovich and Petrov, Karl Ivanovich
ZIRCONIUM: CHEMICAL AND PHYSICAL METHODS OF ANALYSIS, tr. by Helen Basil. Nov 62, 230p. 395 refs.
Order from OTS $3.00 AEC-tr-5373

Trans. of mono. Tsirkonii: Khimicheskie i Fizicheskie Metody Analiza, Moscow, 1960 [211p.].

DESCRIPTORS: *Zirconium, Analysis, Chemical analysis, Chemical properties, Physical properties, Preparation, Solutions, Hydrolysis, Complex compounds, Polymers, Nitrates, Sulfates, Ions, Qualitative analysis, Minerals, Ores, Zirconium alloys, Zirconium compounds, Dioxides, Hydroxides, Separation, *Gravimetric analysis, Chemical precipitation, Chromatography, Electrodialysis, *Volumetric analysis, *Colorimetric analysis, *Radiographic analysis, *Spectrographic analysis, *X-ray spectroscopy, Impurities, Determination, Aluminum, Magnesium, Beryllium, Zinc, Uranium, Hafnium, Gases, Oxygen, Nitrogen, Hydrogen.

Contents:
General data on zirconium
Chemical properties of zirconium aqueous solutions
Analytical characteristic of zirconium
Application of solubility methods to substances containing zirconium
Separation of zirconium from other elements and gravimetric methods of its determination
Volumetric, photometric and radiometric methods of zirconium determination
Optical spectra and X-ray spectrum methods of zirconium determination
Determination of impurities in zirconium and alloys with a zirconium base by chemical methods
Determination of zirconium impurities by physical methods
Determination of gases in zirconium.

Hartmann, A.
SEPARATION OF HCl FROM PVC AT HIGH TEMPERATURES. 26 Aug 55, 4p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18335

Trans. of Kolloid Zeitschrift (West Germany) 1954 [v. 139, no. 3] p. 146-150.

DESCRIPTORS: Separation, *Polyvinyl chloride, *Hydrochloric acid, *High temperature research, Metallic compounds.

Kaiser, H.
THE CALCULATION OF THE SENSITIVITY OF DETECTION IN SPECTROCHEMICAL ANALYSIS.
18 Aug 49, 22p. (figs. formulae tables refs. omitted).
Order from SLA $2.60 62-18359

Trans. of Spectrochimica Acta (Gt. Brit.) 1947, v. 3, no. 1, p. 40-67.

DESCRIPTORS: *Sensitivity, *Detection, *Chemical analysis, *Spectrographic analysis, Spectroscopy, Measurement, Mathematical analysis, Scattering.

Labhart, H., Lotmar, W., and Schmid, A. P.
AN INTERFEROMETRIC MICRO-METHOD FOR DIFFUSION MEASUREMENTS, tr. by Bertha P. Klenova. 22 Jan 53, 10p. 27 refs. TVA 3156.
Order from OTS or SLA $1.10 62-25781

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1951, v. 34, p. 2449-2457.

DESCRIPTORS: *Laboratory equipment, *Interferometers, *Microanalysis, *Electrophoresis, Potassium compounds, Chlorides, Sucrose, *Diffusion.

Diffusion measurements made with an interferometric microelectrophoresis apparatus are described. The experimental results obtained with potassium chloride and sucrose are consistent within 1.5 per cent with the data reported in the literature. A simple evaluation method of the graphs is proposed and a comparison is made with other methods. (Author)

Liu, P'ei-Chang.
ON SEPARATION CRITERIA IN GAS-PHASE CHROMATOGRAPHY. Oct 62 [8]p. 9 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Scientia Sinica (Chinese People's Republic) 1961, v. 10, no. 1, p. 70-[83].
Available in Russian from OTS or SLA $1.60 in 61-27851.

DESCRIPTORS: *Gas chromatography, Separation, Towers (Chemistry), Resolution, Diffusion, *Chemical engineering.

Ludewig, H.
TEST WITH NYLON VS. PERLON. [1962] 3p. (figs. omitted)
Order from SLA $1.10 62-18433

Trans. of Faserforschung und Textiltechnik (Germany) 1952 [v. 3, no. 9] p. 354-356.

DESCRIPTORS: *Nylon, *Synthetic fibers, Polymers, Tests, *Chemical analysis, Melting, Polyamide plastics

Perlon, Nylon and other fibers of linear high polymers are fused into a drop from which filaments can be drawn which can be stretched out of their natural shape. Perlon L dissolves in cold, Nylon in hot 4.2 n hydrochloric acid thus making differentiation between the two polyamides possible. If water is added to the solution, turbidity appears because of deposit. In mixed yarns or fabrics the question whether they contain Perlon or Nylon along with other fibers can be answered by evidence of turbidity due to dissolving in 4.2 n hydrochloric acid a and deposits in water. Quantitative composition of mixed polyamides from capro-lactam and adipic acid-hexamethylene diamine can be determined by approximation from the melting point, and in exact manner, chemically, by determining the diamine content. The determination of diamine takes place in such a manner that the polyamide is hydrolyzed with hydrochloric acid and the diamine expelled into prepared acid by vapor distillation after alkali has been added. (Author)

Nikitin, V. N. and Volchek, B. Z.
STUDY OF POLYMERS BY MEANS OF INFRARED SPECTROSCOPY. Oct 62 [7]p. 105 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of #Zavodskaya Lab[oratoriya (USSR) 1962 [v. 28] no. 1, p. 49-[55].
Another trans. is available from ATS $15.45 as ATS-73P60R [1962] 10p.

DESCRIPTORS: *Polymers, *Infrared spectroscopy, Molecular structure, Crystal structure, Chemical bonds, Molecular isomerism, Spectra (Infrared), Polarization, *Chemical engineering.

Pyriki, Constantin; Müller, Rudolf, and Moldenhauer, Walter.
[ON] THE OCCURENCE OF POLYCYCLIC HYDROCARBONS IN CIGARETTE SMOKE. II. INVESTIGATION OF THE LIPOPHILE COMPONENTS OF THE VARIOUS PHASES OF SMOKING AND OF THE TOBACCO. Jan 61, 28p.
Order from K-H $35.00 K-H 10573 e

Trans. of [Institut für Tabakforschung. Berichte] (East Germany) 1960, v. 7, no. 1, p. 81-102.

DESCRIPTORS: *Cigarettes, Smokes, *Hydrocarbons, Polycyclic compounds, Tobacco, *Lipids, *Lysines.

Schroter, Hans Botho.
INVESTIGATIONS OF THE ALKALOIDS OF THE GATERSLEBEN TOBACCO ASSORTMENT (YEAR OF PLANTING: 1954). [1962] 20p.
Order from KH $25.00 K-H 5629 c

Trans. of Kulturpflanze (Germany) 1955, v. 3, p. 114-126.

DESCRIPTORS: *Tobacco, *Alkaloids, Chemical analysis.

Terent'ev, A. P., Obtemperanskaya, S. I., and Ermolenko, N. V.
THE DETERMINATION OF CHLORINE AND BROMINE IN ORGANIC COMPOUNDS BY MEANS OF MAGNESIUM NITRIDE. 29 June 62 [6]p. 5 refs.
Order from OTS or SLA $1.10 62-18977

Trans. of Nauch[nye] Doklady Vysshei Shkoly. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1958, no. 1, p. 83-85.
Another trans. is available from ATS $5.00 as ATS-01L35R [1959] 3p.

DESCRIPTORS: Determination, *Chlorine, *Bromine, *Organic compounds, *Chemical analysis, Reduction (Chemistry), Nitrides, Magnesium compounds, *Halogens.

A simple, easy to perform, safe, and rapid method for determining chlorine and bromine in organic compounds is proposed which is based on the reductive decomposition of the organic chlorine- or bromine-containing compound by magnesium nitride, followed by a determination of the halide ion in the resulting magnesium halide by the argentometric Volhard titration. Quantitative, reproducible results for the determination of iodine were not obtained. (Author)

Terent'ev, A. P., Obtemperanskaya, S. I., and Buzlanova, M. M.
A SEMIMICRO METHOD FOR THE QUANTITATIVE DETERMINATION OF ACRYLONITRILE. 6 July 62 [4]p. 8 refs.
Order from OTS or SLA $1.10 62-18972

Trans. of Moscow U. Vestnik. Ser[iya] Mat[ematiki] Mekh[aniki] Astron[omii] Fiz[iki] Khim[ii] (USSR) 1956, v. 11, no. 1, p. 187-189.

DESCRIPTORS: *Acrylonitriles, Quantitative analysis.

Trostyanskaya, E. B. and Tevlina, A. S.
SELECTIVE ION-EXCHANGE SORBENTS FOR CHROMATOGRAPHIC ANALYSIS (Selektivnye Ionoobmennye Sorbenty dlya Khromatograficheskogo Analiza) tr. by Esther Goldberg. 4 Apr 60 [22]p. (foreign text included) 40 refs.
Order from OTS or SLA $2.60 UCRL Trans-530 (L)

Trans. of #Zhurnal Analiticheskoi Khimii (USSR) 1957, v. 12, p. 1042-1048.

DESCRIPTORS: *Chromatographic analysis, *Ion exchange resins, Absorbents, Physical properties, Sorption, Synthesis, Molecular structure, Lattices, Carboxylic acids, Phosphoric acids, Arsenic compounds, Selenium compounds.

Inorganic Chemistry

DEVELOPMENTS IN INORGANIC CHEMISTRY. 29 Jan 63 [24]p. 14 refs. JPRS: 17345.
Order from OTS $0.75 63-21005

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1962, v. 7, no. 5, p. 975-979 and no. 9, p. 2200-2205.

DESCRIPTORS: Inorganic substances, Chemistry, *Refractory materials, *Yttrium compounds, *Carbides Production, Physical properties, Chemical properties, *Alloys, Crystal structure, Deformation, Plasticity, *Creep, Hardening, Atomic structure.

Contents:
The production and some physical and chemical properties of yttrium carbides, by G. V. Samsonov and others
Atomic structure and mechanism of plastic deformation of solid solutions, by L. N. Guseva and A. A. Babareko

Mikheeva, V. I.
HYDRIDES OF THE TRANSITION METALS. Oct 62, 193p. 678 refs.
Order from OTS $3.00 AEC-tr-5224

Trans. of mono. Gidridy Perekhodnykh Metallov, Moscow, 1960 [211p.].

DESCRIPTORS: *Transition elements, Metals, *Hydrides, Synthesis, Hydrogenation, Alkali metal compounds, Borohydrides, Aluminum compounds, Complex compounds, Group III elements, Group IV elements, Group V elements, Group VI elements, Group VII elements, Group VIII elements, Copper compounds, Zinc compounds, Actinide series compounds, Rare earth elements.

Contents:
Methods of synthesis and study of the properties of transition metal hydrides
Reaction of the elements of the scandium subgroup, lanthanides, and actinides with hydrogen
Hydrides of the elements of the titanium subgroup
Reaction of metals of groups V-VIIb with hydrogen
Behavior of metals of group VIII toward hydrogen
Behavior of elements of the copper and zinc sub-groups toward hydrogen
The question of the pattern of variation of the properties of the transition metal hydrides.

Souchay, Pierre and Massart, René.
STUDY OF THE REDUCTION OF SILICOMOLYBDIC ACID. [1962] [3]p. 3 refs.
Order from SLA $1.10 62-14535

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1961, v. 253, no. 16, p. 1699-1701 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Silicon compounds, *Molybdenum compounds, Acids, Reduction, Electrolysis, Titration.

A test for the existence of four reduced derivatives of silicomolybdic acid is presented; two of these derivatives belong to the α series, and contain two and four pentavalent Mo atoms per twelve Mo atoms. The other two are related to the β acid; moreover, one (n = 6) is much more stable than the non-reduced β acid, while the other (n = 3) disproportionates, in the long run, giving the former and the non-reduced other form. (Author)

Walter-Levy, Leone; Wolff, Peter Maarten de; and Vincent, Jean Pierre.
CALCIUM CHLOROPHOSPHATES, tr. by Bertha P. Klenova. 12 June 57, 3p. 9 refs. TVA 3632.
Order from OTS or SLA $1.10 62-32270

Trans. of Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1955, v. 240, p. 308-310 (pub. by Gauthier-Villars et Cie, Paris.

DESCRIPTORS: *Calcium compounds, Chlorides, *Phosphates, Phosphoric acids, Chemical reactions, Reaxtion kinetics, X-ray diffraction analysis.

The reaction of phosphoric acid and of its calcium salts with calcium chloride was studied by the wet method in closed systems as a function of temperature, chloride concentration, and time. (Author)

Organic Chemistry

Andreeva, M. A., Gribova, I. A. and others.
SOME ROUTES FOR THE SYNTHESIS OF NEW ORGANOPHOSPHORUS MONOMERS AND POLYMERS. [1962] 9p.
Order from ATS $12.00 ATS-97P63R

Trans. of mono. Khim[iya] i Primenenie Fosfororgan[icheskikh] Soedin[enii] (Akad. Nauk SSSR, Kazansk. Filial, tr. Konf. (no. 2) 1959) [Moscow] 1962, p. 263-271.
A complete trans. of mono. is available from OTS or SLA $38.50 as 62-33349, JPRS-15432, 25 Sep 62 [1160]p.

DESCRIPTORS: *Organic compounds, *Phosphorus compounds, *Polymers, Synthesis.

Baccaredda, M. and Butta, E.
DYNAMIC MECHANICAL PROPERTIES AND ISOPHASE TRANSITIONS OF LINEAR POLYETHYLENES AND OF SOME POLY-ALPHA-OLEFINS. Jan 63, 5700 words, 30 refs.
Order from CTS(Chem) $22.80 CTS(Chem)-321
subsequent copies $3.80

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 11, p. 1228-1236.

DESCRIPTORS: Polymers, *Ethylenes, Propenes, Butenes, Pentenes, Mechanical properties, Phase transitions.

Calderazzo, Fausto and Ercoli, Raffaele.
RESEARCHES ON THE SYNTHESIS OF VANADIUM HEXACARBONYL AND ON SALTS OF HEXACARBONYL-VANADATE ANION. Jan 63, 4500 words, 11 refs.
Order from CTS(Chem) $13.50 CTS(Chem)-309
subsequent copies $2.25/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 9, p. 990-996.

DESCRIPTORS: *Metalorganic compounds, *Vanadium compounds, *Carbonyl radicals, *Vanadates, Salts, Synthesis, Magnesium compounds, Sodium compounds, Pyridines.

Calderazzo, F[austo] and Calvi, P. L.
THE VANADIUM (O)-π-TROPYLIUM-π-CYCLOHEPTATRIENE CATION [$V(C_7H_8)$] . Jan 63, 2400 words, 18 refs.
Order from CTS(Chem) $9.60 CTS(Chem)-319
subsequent copies $1.60/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 11, p. 1217-1220.

DESCRIPTORS: *Metalorganic compounds, Complex compounds, *Vanadium compounds, *Cycloheptatriene derivatives, Synthesis.

Chini, P., Baradel, A., and others.
NOTE ON SOME METALORGANIC ALUMINUM COMPOUNDS DERIVED FROM ACETYLENE AND ITS HOMOLOGS. Jan 63, 5600 words, 16 refs.
Order from CTS(Chem) $22.40 CTS(Chem)-320
subsequent copies $3.70/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 11, p. 1220-1227.

DESCRIPTORS: *Metalorganic compounds, *Aluminum compounds, *Acetylenes, Acetylene derivatives, Syntheses.

Farina, M., Peraldo, M., and Bressan, G.
PREPARATION, INFRARED SPECTRA, AND CONFORMATIONAL ISOMERS OF cis- AND trans-ALKENYL ETHERS. Jan 63, 4900 words, 22 refs.
Order from CTS(Chem) $9.80 CTS(Chem)-315
subsequent copies $3.25/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1960, v. 42, no. 9, p. 967-974.

DESCRIPTORS: *Ethers, Preparation, Spectrum (Infrared), Molecular isomerism.

Kirsanov, A. V., Levchenko, E. S. and others.
PHOSPHORUS ISOCYANATES. [1962] 8p.
Order from ATS $9.00 ATS-23P66R

Trans. of mono. Khim[iya] i Primenenie Fosfororganicheskikh] Soedin[enii] (Akad. Nauk SSSR, Kazansk. Filial, tr. Konf. (no. 2) 1959) [Moscow] 1962, p. 168-174.
A complete trans. of mono. is available from OTS or SLA $38.50 as 62-33349, JPRS-15432, 25 Sep 62 [1160]p.

DESCRIPTORS: *Phosphorus compounds, Cyanates, *Isocyanates, Organic compounds, Chemistry, Chemical reactions.

Komppa, Gust.
BROMOTRIMETHYLSUCCINIC ACID AND THE β-LACTONE OF TRIMETHYLMALIC ACID. [1962] 3p. 4 refs.
Order from SLA $1.10 62-18252

Trans. of [Chemische Berichte] (Germany) 1902, v. 35, p. 534-535.

DESCRIPTORS: Organic compounds, *Methyl radical, Bromides, *Succinic acids, *Malic acid, *Lactones, *Bromination,

Kvitko, S. M. and Perekalin, V. V.
THE SYNTHESIS OF DERIVATIVES OF NITROAMINOBUTADIENE. 19 June 62 [10]p. 4 refs.
Order from OTS or SLA $1.10 62-18979

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 1] p. 144-150.

DESCRIPTORS: *Synthesis, *Butadienes, *Amines, *Nitro compounds, *Malonaldehydes, Molecular structure, Condensation reactions, Bromination, Hydrolysis.

A study of the reaction of the "monoanil" of nitromalonaldehyde (α-nitro-β-phenylaminoacrolein) (I) with a series of compounds containing active methyl and methylene groups was undertaken for the purpose of synthesizing nitroaminobutadiene derivatives and studying the mechanism of the reaction of nitromalonaldehyde with active methylene and methyl components. By condensation of the "monoanil" of nitromalonaldehyde with compounds containing active methyl and methylene groups, a general method of synthesis of derivatives of nitroaminobutadiene was achieved for the first time. The chemical properties of nitroaminobutadienes are explained by the existence of a conjugated intramolecular hydrogen ring. (Author)

Labunskii, I. P. and Tsukerbanik, I. P.
DIE KONDENSATION DITERTIÄRER GLYKOLE MIT BENZOL (Condensation of Diertiary Glycols with Benzol). 5p. (text in German).
Order from TIB $1.20

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 80, no. 3, p. 369-372.
Another trans. is available in English from SLA as R-4867, 8p.

DESCRIPTORS: *Condensation, *Glycols, Benzenes

Levina, R. Ya. and Tsurikov, F. F.
CONTACT CONVERSION OF VINYLCYCLOHEXANE, ALLYLCYCLOHEXANE AND ALLYLBENZOL. [1962] [7]p. (formulae equations refs. omitted).
Available on loan from SLA 63-10421

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1934, v. 4, no. 9, p. 1250-1257.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 60-13732, DSIR NLL M.1029 [1960] 15p.

DESCRIPTORS: *Cyclohexanes, Vinyl radicals, Allyl radicals, *Benzenes, Catalysis, Molecular isomerism.

The ability of unsaturated cyclic six-member hydrocarbons with a double bond in the side chain (vinylcyclohexane and allylcyclohexane) to enter into a reaction of irreversible catalysis is demonstrated. A catalytic isomerization of allylbenzol into propenyl benzol has been carried out, i.e., a displacement of the double bond into the inside of the molecule on contact with Pd. A catalytic isomerization of allylbenzol proved the assumed scheme for irreversible catalysis of unsaturated cyclic hydrocarbons with a double bond in the side chain and, namely, preliminary displacement of the double bond into the ring, as well as the irreversible catalysis of the cyclohexenic hydrocarbon formed. (Author)

Mintin, Yu. V. and Glukhov, N. A.
DIE POLYMERISATION EINIGER VERBINDUNGEN MIT ZWEI ISOPROPENYLGRUPPEN (Polymerization of some Compounds with Two Isopropenyl Groups). 2p. (text in German).
Order from TIB $0.85

Trans. of Akademiya Nauk SSSR, Doklady, 1957, v. 115, no. 1, p. 97-99.
Another trans. is available in English from ATS as ATS-50K20R, 4p.

DESCRIPTORS: *Polymerization, Propenes, *Allyl radicals

Natta, G., Asta, G. dall' and Mazzanti, G.
CRYSTALLINE ALTERNATING ETHYLENE-CYCLOHEPTENE COPOLYMERS. Jan 63, 3000 words, 8 refs.
Order from CTS(Chem) $12.00 CTS(Chem)-318
subsequent copies $2.00/ea.

Trans. of [la] Chimica e [1']Industria (Italy) 1962, v. 44, no. 11, p. 1212-1216.

DESCRIPTORS: Polymers, *Ethylenes, *Cycloheptenes, Copolymerization, Catalysts, Vanadium catalysts, Aluminum catalysts, Crystal structure, Chemical bonds, Heptenes.

Noro, Ken and Takida, Hiroshi.
POLYMERIZATION BY t-BUTYL PERBENZOATE-ℓ-ASCORBIC ACID SYSTEM. Rept. 2 of Solution Polymerization of Vinyl Acetate with Redox Initiator at Low Temperatures. [1962] 14p. 30 refs.
Order from SLA $1.60 62-18982

Trans. of Kobunshi Kagaku (Japan) 1962, v. 19, no. 204, p. 245-251.

DESCRIPTORS: *Polymerization, Butyl radicals, Benzoates, *Ascorbic acid, *Vinyl radicals, *Acetates, Oxidation-reduction reactions, Low-temperature research, Methanols.

Solution polymerization of vinyl acetate in methanol was studied in the temperature range of 30° to -20° C with t-butyl perbenzoate-ℓ-ascorbic acid. The optimum mole ratio of t-butyl perbenzoate for ℓ-ascorbic acid was 4/1. The average apparent activation energy for polymerization was about 10.0 kcal/mole. This redox system was very effective for the polymerization in the existence of methanol. It was found that the rate of polymerization is proportional to the square root of the concentration of t-butyl perbenzoate and the polymerization was also promoted by ethanol or methanol containing water. Methyl acrylate, methyl methacrylate, styrene and acrylonitrile could be polymerized with this redox initiator in methanol, but 2-methyl-5-vinyl pyridine could not be polymerized in methanol except in bulk. (Author)

Noro, Ken and Takida, Hiroshi.
STUDIES ON POLYVINYL ALCOHOL. Rept. 3 of Solution Polymerization of Vinyl Acetate with Redox Initiator at Low Temperatures. [1962] 9p. 11 refs.
Order from SLA $1.10 62-18981

Trans. of Kobunshi Kagaku (Japan) 1962, v. 19, no. 204, p. 251-255.

DESCRIPTORS: *Polyvinyl alcohol, *Polymerization, *Acetates, *Vinyl radicals, *Oxidation-reduction reactions, Infrared spectroscopy, Ultraviolet spectroscopy, Low-temperature research.

Properties of polyvinyl alcohol derived from polyvinyl acetate which was polymerized in methanol with t-butyl-ℓ-ascorbic acid redox initiator at low temperatures were studied. It was found that the equilibrium degree of swelling and densities of PVA films obtained at various temperatures had not significant difference but the 1,2-glycol structure in polyvinyl alcohol decreased and the crystallinity estimated from infrared spectra increased with lowering polymerization temperature. Ultraviolet spectra of the polyvinyl alcohol aqueous solution showed peak maximum at 230 and 275 mμ. It is considered to be mainly the influence of the initiator used. (Author)

Orito, Y. and Imai, S.
EFFECT OF SOLVENTS ON HYDROGENATION OF THE BENZENE RING IN THE PRESENCE OF NICKEL AND COBALT CATALYSTS. [1962] 4p.
Order from ATS $6.50 ATS-22P66]

Trans. of Shokubai (Japan) 1962, v. 4, no. 1, p. 5-7.

DESCRIPTORS: *Cobalt catalysts, *Nickel catalysts, Catalysts, *Benzenes, Molecular structure, Hydrogenation, Solvent action.

Osipov, O. A., Minkin, V. I., and Kashireninov, O. E.
PREPARATION OF METHYL POLYNAPHTHYLENE. [1962] 6p.
Order from OTS or SLA $1.10 62-18867

Trans. of Russian patent 143,554, cl. 39s, 30, appl. no. 721,862/23, 16 Mar 61 (pub. in #Byulleten' Izobretenii (USSR) 1961, no. 24).

DESCRIPTORS: Preparation, *Methyl radical, *Naphthylenes, Halides, *Condensation reactions, Catalysts, Resins.

A method is proposed for preparing methyl polynaphthylene by the polycondensation of 1-chloro-methyl naphthalene with catalytic amounts of halides of elements of Group 4 at high temperatures. The polycondensate is dissolved in benzene, washed with an alkali solution in order to remove the catalyst, then dried and ground. The yield is 70-90%. A new type of resin was obtained by this process which has good magnetic, dielectric, physico-chemical and chemical properties, which make it suitable for an extensive practical application on an expanded raw material basis. The technique of the synthesis of the resin and its purification are simple and do not require any complicated equipment.

Poroshin, K. T., Khurgin, Yu. I., and Prokhorova, N. I.
JOINT POLYCONDENSATION OF ESTERS AND N-CARBONIC ANHYDRIDES OF D,L-ALANINE AND GLYCINE. Pt. 2 of Kinetics and Chemistry of the Polycondensation of d-Aminoacid Esters and Peptides, tr. by I. Gawronska. 10 July 61, 8p. 2 refs. Courtaulds Misc. Lit. 3332; DSIR NLL M. 3422.
Order from OTS or SLA $1.10 62-24834

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1960, no. 9, p. 1687-1692.

DESCRIPTORS: *Glycines, *Alanines, *Anhydrides, Esters, Amino acids, Acids, Peptides, Condensation reactions, Carbon dioxide.

Pregaglia, G., Peraldo, M., and Binaghi, M.
POLYDIMETHYLKETENE WITH A POLYKETONIC STRUCTURE. Jan 63, 3900 words, 14 refs.
Order from CTS(Chem) $15.60 CTS(Chem)-314
subsequent copies $2.60/ea.

Trans. of Gazz[etta] Chim[ica] Italiana, 1962, v. 92 [no. 6] p. 488-500.

DESCRIPTORS: Polymers, *Ketenes, Methyl radicals, Synthesis, Friedel-crafts reaction, Crystals, Molecular structure, Ketones.

Sakuyama, S., Ajisaka, E. and others.
A NEW METHOD FOR THE MANUFACTURE OF POLYETHER. [1962] 6p.
Order from ATS $12.50 ATS-29P59J

Trans. of published Japanese patent 16,742/61, appl. 19 Mar 59, pub. 18 Sep 61.

DESCRIPTORS: Production, *Polymers, *Ethers.

Smolyan, Z. S., Kurdyumova, N. A., and Pyryalova, P. S.
LOW TEMPERATURE CHLORINATION OF ETHANE IN THE PRESENCE OF INITIATORS. [1960] 5p.
Order from ATS $8.10 ATS-54M40R

Trans. of Trudy [po] Khimii i Khim. Tekhnol. (USSR) 1958, v. 1, no. 1, p. 187-189.

DESCRIPTORS: *Low temperature research, *Chlorination, *Ethanes, Azo radicals, Carbon tetrachloride, Canavanine, Benzoyl radicals, Peroxides, Methyl radicals, Carbonates, *Laboratory equipment.

Spiliadis, A., Bretcanu, D. and others.
PHENOL DESULFURIZATION PROCESS TO OBTAIN A PRODUCT SUITABLE FOR CATALYTIC REDUCTION. Jan 63 [6]p. 2 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Revista de Chimie (Rumania) 1962 [v. 13] no. 3, p. 141ff.

DESCRIPTORS: *Phenols, Desulfurization, Oxidation, Distillation, Catalysis, Reduction, *Chemical engineering.

Valvassori, A., Sartori, G., and Ciampelli, F.
HOMOPOLYMERIZATION OF 1,5-HEXADIENE AND ITS COPOLYMERIZATION WITH ETHYLENE. Jan 63, 3700 words, 23 refs.
Order from CTS(Chem) $14.80 CTS(Chem)-312
subsequent copies $2.50/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44 [no. 10] p. 1095-1100.

DESCRIPTORS: *Dienes, Polymerization, *Ethylenes, Copolymerization, Chemical analysis, Catalysts.

Valvassori, A. and Sartori, G.
TERPOLYMERIZATION OF ETHYLENE-PROPYLENE-1-BUTENE. Jan 63, 2200 words, 18 refs.
Order from CTS(Chem) $8.80 CTS(Chem)-311
subsequent copies $1.50/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 10, p. 1091-1094.

DESCRIPTORS: *Ethylenes, *Propenes, *Butenes, Polymerization, Reaction kinetics, Elasticity, Chemical analysis.

Vargaftik, M. N. and Moiseev, I. I.
METHOD OF PREPARATION OF VINYL ACETATE. [1962] 3p.
Order from ATS $5.50 ATS-60P64R

Trans. of Soviet patent 145,569, filed 14 Oct 60, under no. 682,550/23, basic certificate of authorship no. 137,511, 19 Apr 60 (#Byulleten' Izobretenii (USSR) 1962, no. 6).

DESCRIPTORS: *Acetates, *Vinyl radicals, Preparation

Physical Chemistry

Adamskii, N. M., Karpacheva, S. M. and others.
EFFECT OF TEMPERATURE ON THE EXTRACTION OF NITRIC ACID BY TRIBUTYLPHOSPHATE, tr. by W. Davis. [1962] 11p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-4852

Trans. of #Radiokhimiya (USSR) 1960, v. 2, no. 1, p. 13-19.

DESCRIPTORS: *Nitric acid, Separation, Temperature, *Phosphates, Butyl radicals, Complex compounds, Reaction kinetics.

The distribution of nitric acid between water and a 0.736 M solution of TBP in kerosene (saturated hydrocarbon) was studied in the acidity range 0.11 moles/l at temperatures of 23, 40, and 70°C. It was found that temperature has only a slight effect on the distribution. The apparent constants for formation of the complexes of nitric acid with tributyl phosphate were calculated. The formation constant for the monosolvate, $\widetilde{K}_1$, changes only slightly with temperature and at temperatures of 23, 40 and 70°C, $\widetilde{K}_1$ equals 0.189 ± 0.029, $0.179 = 0.021$, and $0.174 = 0.0196$; the apparent constant for formation of the complex $(HNO_3)_2 \cdot TBP$ decreases with temperature and at 23, 40, and 70°, $\widetilde{K}_2$ is equal to $4.05 \cdot 10^{-4} \pm 1.1 \times 10^{-4}$, $5.03 \cdot 10^{-4} \pm 0.99 \cdot 10^{-4}$ and $7.25 \cdot 10^{-4} = 0.23 \cdot 10^{-4}$

Andreev, K. K. and Kondrikov, B. N.
THE COMBUSTION OF MIXTURES OF LEAD AZIDE AND LIQUID NITROESTERS. (O Gorenii Smesei Azida Svintsa i Zhidkikh Nitroefirov). Nov 61 [6]p. 4 refs. TIL/T. 5257; [DSIR] NLL M. 3520.
Order from OTS or SLA $1.10 62-25361

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1961, v. 137, no. 1, p. 130-133.

DESCRIPTORS: *Azides, *Lead compounds, *Nitroglycerin, *Ethylenes, *Nitrates, *Glycols, Mixtures, Liquids, *Combustion, Esters, *Nitro compounds.

Belosel'skii, V.
THE PHOTOCHEMICAL DECOMPOSITION OF AMMONIA ADSORBED ON CRYSTALS OF $CuSO_4$ AND MgO (Fotokhimicheskii Raspad Ammiata, Adsorbirovannogo na Kristallakh $CuSO_4$ i MgO). [1962] [14]p.
Order from OTS or SLA $1.60 AEC-tr-5186

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1939, v. 13, p. 586-592.

DESCRIPTORS: *Photochemistry, *Electrochemistry, *Ammonia, Decomposition, Adsorption, *Crystals, *Copper compounds, Sulfates, *Magnesium compounds, Oxides.

The purpose of this study is to investigate the types of adsorption which are due to electrostatic polarization, but which vary in mechanism (the adsorption of a gas on the surface of a solid, and the adsorption of a gas by incorporation within a crystal lattice). The adsorption of ammonia on crystals of $CuSO_4$ and MgO was investigated. The change in energy state of the adsorbed molecules was followed from the shift in the long wavelength limit for the photochemical decomposition of ammonia, and from the shift in the maximum for the effectiveness of the decomposition. (Author)

Bersuker, I. B.
INTERNAL ASYMMETRY IN COMPLEX COMPOUNDS. II. RESULTS AND DISCUSSION. [1962] 14p. 24 refs.
Order from OTS or SLA $1.60 62-18914

Trans. of Zhur[nal] Strukturnoi Khimii (USSR) 1961, v. 2, no. 6, p. 734-739.

DESCRIPTORS: *Complex compounds, Transition elements, Crystal structure, Transition temperature, Stereochemistry.

Results of numerical calculations of the internal asymmetry of certain aqueous complexes of transition metals of the first group are given. The role of dynamic effects (brought about by the existence of three equivalent asymmetrical configurations of the complex) is established by experimental determination of the internal asymmetry. It is shown (qualitatively that every measuring method has its own temperature below which the complex is asymmetrical and above which its asymmetry cannot be detected because all asymmetrical configurations are mixed. Comparison with the experimental data for the crystalline state shows that the theoretical results are in qualitative agreement with the experiment.

Chirkov, N. M., Vinnik, M. I. and others.
HETEROGENEOUS ACID CATALYSIS. Jan 63 [22]p. 39 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. from mono. Khimicheskii Kinetiki, Kataliza, i Reaktsionnoi Sposobnosti, AN SSSR, 1955.

DESCRIPTORS: *Catalysts, Reaction kinetics, Alumina-silica catalysts, Acids, Hydrochloric acid, Alcohols, Acetates, Acetic acids, *Chemical engineering.

Déribéré, Maurice.
NEW METHOD OF CONTROL BY FLUORESCENCE OF THE POLYMERIZATION OF PHENOPLASTS (Nouvelle Méthode de Contrôle par Fluorescence de la Polymérisation des Phénoplastes). [1962] [5]p. (foreign text included) 8 refs.
Order from SLA $1.10 62-18188

Trans. of Peintures, Pigments, Vernis (France) 1943, v. 19, no. 5, p. 142.

DESCRIPTORS: Control, *Polymerization, *Fluorescence, *Phenolic resins, Varnishes, *Mercury lamps.

Dmitrenko, L. M., Lachinov, S. S., and Sivyakova, R. F.
THE EFFECT OF CATHODE AND ANODE POLARIZATION OF THE CATALYST ON ITS ACTIVITY IN THE SYNTHESIS OF AMMONIA. [1962] 11p. 11 refs.
Order from OTS or SLA $1.60 62-18905

Trans. of Kinetika i Kataliz (USSR) 1960, v. 1, no. 3, p. 379-384.

DESCRIPTORS: *Ammonia, Synthesis, Catalysts, Polarization, Anodes, Cathodes.

The paper deals with the method and results of investigations of the effect of the polarization of the catalyst on its activity and the effect of the chemosorption of nitrogen and hydrogen, and also the synthesis of ammonia on the strength of polarization currents. It is shown that in cathode polarization the activity of the catalyst is increased and in anode polarization it is decreased. It is proposed that the synthesis of ammonia has an electronic mechanism and that the transfer of electrons from the catalyst to the adsorbed particles is the limiting phase (stage) of the process. (Author)

Fastovskii, V. J. and Artym, R. I.
EXPERIMENTAL INVESTIGATION OF THE CRITICAL THERMAL LOAD WHEN BINARY MIXTURES ARE BOILED (Eksperimental'noe Issledovanie Kriticheskoi Teplovoi Nagruzki pri Kipenii Binarnykh Smesei).
July 61 [10]p. 8 refs. TIL/T. 5218; [DSIR] NLL M. 3445.
Order from OTS or SLA $1.10 62-25357

Trans. of Teploenergetika (USSR) 1958, v. 5, no. 8, p. 74-78.

DESCRIPTORS: *Thermochemistry, Mixtures, Boiling, *Alcohols, Water, Methanols, Propanols, Butanols, Ketones.

Results are furnished of an investigation of the critical thermal load at atmospheric pressure in relation to the composition for mixtures of methanol, propanol, isopropanol, n - butanol, methyl-ethyl-ketone and isoamyl-alcohol with water. A diagram of the experimental apparatus used is given. (Author)

Gamo, Itaru.
FUNDAMENTAL VIBRATIONS OF PHOSPHINE, tr. by Bertha P. Klenova. 11 Jan 55, 3p. 6 refs. TVA 3392.
Order from OTS or SLA $1.10 62-32269

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1954, v. 239, p. 1478-1480 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Phosphines, Deuterated compounds, Vibration, Potential theory.

Calculation of normal phosphine vibrations with the aid of the most general potential functions, with due regard to the anharmonics. (Author)

Ginzburg, V. I., Veselovskii, V. I.
THE PHOTOELECTROCHEMICAL PROCESS AND MECHANISM FOR THE EVOLUTION OF OXYGEN ON A Pt-ELECTRODE (Fotoelektrokhimicheskii Protsess i Mekhanizm Vydeleniya Kisloroda na Pt-Elektrode).
[1962] 22p. 7 refs.
Order from OTS or SLA $1.60 AEC-tr-5220

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1950, v. 24, p. 366-378.

DESCRIPTORS: *Photochemistry, Ultraviolet radiation, *Electrochemistry, *Platinum electrodes, *Oxygen, Production, Reaction kinetics.

Anodically polarized platinum acquires high photoelectrochemical activity which is expressed in a lowering of the oxygen overvoltage by an amount $\Delta V_c \cong 0.5V$ under ultraviolet irradiation. The limit of the photoelectrochemical sensitivity of a Pt-electrode is at $\lambda = 400\ m\mu$; there is a sharp rise in spectral sensitivity which begins at $\lambda = 330\ m\mu$. The component which absorbs radiation in the photoelectrochemical process on a platinum electrode is platinum oxide. The reacting complex is a higher oxygenated surface compound on the Pt·PtO electrode which determines the electrode potential in the region of V = 0.9 to 1.5V. The mechanism of the photoelectrochemical process is a sensitized one. Since the photoelectrochemical current is a linear function of the potential, the reaction determining the rate of the photoelectrochemical and of the electrochemical evolution of oxygen on a Pt·PtO electrode must be the decomposition of oxygenated surface complexes. The photoelectrochemical, sensitization process for the evolution of oxygen on a platinum electrode is essentially an effect of photocatalysis on Pt·PtO in solution. (Author)

Golutvin, Yu. M. and Kozlovskaya, T. M.
VARIATION OF ENTHALPY AND SPECIFIC HEAT IN THE VANADIUM-SILICON SYSTEM. [1962] 9p. 8 refs.
Order from OTS or SLA $1.10 62-18908

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, no. 2, p. 362-364.

DESCRIPTORS: Enthalpy, Specific heat, *Vanadium, *Silicides, Heat of formation, Chemical bonds.

The temperature dependences of the specific heats of vanadium metal and vanadium silicides V_3Si, F_5Si_3, VSi_2, equations (1) - (4), are determined by the method of mixing in a metal calorimeter. (Author)

Istratov, A. G. and Librovich, V. B.
THE THEORY OF FLAME VELOCITY IN SYSTEMS INVOLVING CHAIN REACTIONS. Jan 63 [6]p. 12 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Zhurn[al] Priklad[noi] Mekh[aniki] i Tekh-[nicheskoi] Fiz[iki] (USSR) 1962, no. 1, p. 68ff.

DESCRIPTORS: *Flame propagation, Velocity, Theory, Chain reactions, Hydrogen compounds, Chlorides, Chemical engineering.

Jasz, A. and Lengyel, T.
INVESTIGATION OF MULTICOMPONENT ION-EXCHANGE EQUILIBRIA WITH RADIOACTIVE ISOTOPES. Jan 63 [5]p. 3 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Magyar Kemiai Folyoirat (Hungary) 1962 [v. 68] no. 4, p. 167-[170].

DESCRIPTORS: *Ion exchange, Ion exchange, Resins, Radioactive isotopes, *Cesium, *Rubidium, *Sodium, Hydrogen, *Chemical engineering.

Joisen, Marie-Louise and Lascombe, Jean.
THE FREQUENCY OF THE CARBONYL GROUP IN ACETOPHENONE, tr. by Bertha P. Klenova. 13 Aug 54, 3p. 8 refs. TVA 3322.
Order from OTS or SLA $1.10 62-32267

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1954, v. 239, p. 51-52 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Chemical bonds, Vibration, *Carbonyl radicals, *Acetophenones, Spectra (Infrared), Raman spectroscopy.

Kitaigorodskii, I. I., Popova, T. A., and Botvinkin, O. K.
INVESTIGATION OF THE LiF-$LiBO_2$ SYSTEM BY THERMOANALYSIS. [1962] 4p. 4 refs.
Order from OTS or SLA $1.10 AEC-tr-5271

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1933, v. 4 no. 3, p. 380-382.

DESCRIPTORS: *Thermochemistry, Glass, Eutectics, *Lithium compounds, Fluorides, Borates, Analysis.

The LiF - $LiBO_2$ system was investigated by thermal analysis. A fusibility diagram was made from the cool ing and heating curves. The diagram had one maximum corresponding to the complex compound $2LiF \cdot 3LiBO_2$. This compound has two polymorphic transformations at 545 and 585°. The initial substances also had polymorphic transformations: LiF at 812 and 762° and $LiBO_2$ at 785°. The eutectic LiF - $2LiF \cdot 3LiBO_2$ had a composition of 67% $LiBO_2$ and a temperature of + 688°C. The eutectic $2LiF \cdot 3LiBO_2$ had a composition of Ca 80% $LiBO_2$ and temperature of + 710°C. (Author)

Kremnev, L. Ya. and Kuibina, N. I.
GELATINISED EMULSIONS. VIII. THE STABILISATION OF SATURATION-CONCENTRATED OIL-WATER AND WATER-OIL EMULSIONS, USING TRIETHANOLAMINE OLEATE: THE STRUCTURE OF ADSORPTION-SOLVATE PROTECTIVE LAYERS IN EMULSIONS (Zhelatinirovannye Emulsii. VIII. Stabilizatsiya Predelno-Kontsentrirovannykh Emulsii Maslo-Voda i Voda-Maslo pri Pomoshchi Oleata Trietanolamina, Stroenie Adsorbtsionno-Solvatnykh Zashchitnykh Sloev v Emulsiyakh). July 62 [13]p. 9 refs. RTS 2024.
Order from OTS or SLA $1.60 62-25458

Trans. of Kolloidnyi Zhurnal (USSR) 1951, v. 13, no. 1, p. 38-45.

DESCRIPTORS: *Colloids, Stabilization, Adsorption, Solvates, Soaps, Fatty acid esters, Ethanols, Amines, Stearates, Metallic soaps.

It has been established that: (a) depending on the degree of dispersion, triethanolamine oleate is capable of stabilizing both normal and reverse-type saturation-concentrated emulsions; (b) in all conditions stabilization is effected by adsorption monolayers, including fairly rarefied ones; (c) the emulsifying capacity of triethanolamine oleate and triethanolamine stearate during the stabilization of normal emulsions is quantitatively equal to that of sodium oleate; (d) during the stabilization of reverse-type emulsions, the emulsifying capacity of triethanolamine oleate becomes five times greater. An examination has been made of the structure of protective layers in emulsions, including interlayers of the contiguous liquids, and the protective action of stabilizers has been investigated. (Author)

Mashovets, V. P. and Zakharov, E. L.
ANALYTIC DETERMINATION OF CARBON FLUORIDES IN ANODIC GASES OF AN ALUMINUM BATH. [1961] 16p. 16 refs. MDF M-115.
Order from OTS or SLA $1.60 62-23140

Trans. of #Zh[urnal Prikl[adnoi] Khim[ii] (USSR) 1956, v. 29, p. 1512-1521.

DESCRIPTORS: Carbon compounds, Fluorides, Gas analysis, *Anodes, *Aluminum, Electrolysis.

A method of analyzing carbon fluorides in gases by means of their decomposition by steam in the presence of active aluminum oxide and silicon dioxide with subsequent absorption of the carbon dioxide gas formed, burning of the carbon monoxide and repeated absorption of the carbon dioxide is developed. The method permits carbon tetrafluoride and higher carbon fluorides to be separated quantitatively. A comparison was made of the method developed with the 'fluorine' method in samples of artificially produced carbon fluorides as well as in samples of gases from industrial aluminum baths. The advantages of the method proposed with respect to both sensitivity and reproducibility and rapidity and simplicity of performance are shown. Anodic gases of industrial aluminum baths with calcined anodes are investigated. It is shown that the gases do not contain analytically perceptible quantities of carbon fluorides in the period between anodic effects. The carbon dioxide gas content during the anodic effect is lowered to 20-40% (against a normal 70 - 85%), the carbon monoxide gas content is increased to 55- 40% (as opposed to 30 - 15%) and 10 - 20% CF_4 and 1 - 3% C_2F_6 appear in the gas at the same time. (Author)

Merzhanov, A. G., Barzykin, V. V. and others.
THERMAL EXPLOSION IN THE LIQUID PHASE UNDER CONDITIONS OF PURELY CONVECTIVE HEAT TRANSFER, tr. by Donald C. Rich and George F. Hill. 13 Mar 62 [15]p. 9 refs. [AMC] (Redstone) Trans-nr-15-62.
Order from OTS or SLA $1.60 62-23520

Trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1961, v. 35, no. 9, p. 2083-2089.

DESCRIPTORS: *Explosives, Decomposition, Heat transfer. *Nitramines, Nitro radicals, Ethyl radicals.

Nicolescu, I. V. and Gruia, M.
ESTABLISHMENT OF CRITERIA FOR SELECTION OF SOLID CATALYSTS. Oct 62 [8]p. 24 refs.
Order from ICE in v. 2, no. 4 $15.00/year

Trans. of Revista de Chimie (Rumania) 1962 [v. 13] no. 1, p. 9ff.

DESCRIPTORS: *Catalysts, *Semiconductors, Titanium compounds, Chromium compounds, Molybdenum compounds, Vanadium compounds, Zinc compounds, Uranium compounds, Oxides, Chemisorption, Adsorption, Molecular isomerism, *Chemical engineering.

Piotrowski, W. von.
THERMAL EXPANSION OF PARAFFIN AND PARAFFIN SOLUTIONS. [1962] 6p. (formulae table refs. omitted).
Order from SLA $1.10 62-18239

Trans. of Z[ei]ts[chrift] f[ür] Physik[alische] Chemie [Leipzig] (Germany) 1919, v. 93, p. 596-606.

DESCRIPTORS: *Hydrocarbons, *Petroleum, *Tar, Solutions, *Thermal expansion, Weighing, Density, *Methanes.

In the present article, a comparison has been made of densities of nine petroleum paraffins having solidifying points between 50.5° and 64.0° (which were determined as a function of the temperature) with expansion coefficients of lignite-tar paraffins calculated according to the work of Zietkowski. It was found that the expansion coefficients of petroleum paraffins in the solid state are located between 0.000842 and 0.005108 on the average, therefore, between 0.001114 and 0.003492. The latter values refer to the paraffins from which pure paraffins having the above cited expansion coefficients were obtained and thus may be considered as average magnitudes. As to the lignite tar paraffins, in the liquid state, it was found that the expansion coefficients are about twice the size of those of petroleum paraffins. In the solid state, however, the expansion coefficients are approximately of the same order of magnitude. It was found that the dependende of the specific weight on the temperature in paraffin solutions in solvents of high specific weight may be expressed by an equation of the first degree. In paraffin solutions in solvents of low specific weight, however, deviations occur in the vicinity of the MP of the paraffin. The specific weight of the solution above the MP of paraffin may be calculated approximately according to the mixture rule.

Poggi, Raoul and Milletti, Mario.
APPARATUS FOR THE RAPID DETERMINATION OF ABSORBING POWER. [1962] 15p.
Order from K-H $18.75 K-H 6124 c

Trans. of Chimica, Milan (Italy) 1957, v. 33, p. 10-15.

DESCRIPTORS: *Absorption, Determination, *Laboratory equipment.

Pop, G.
THE CATALYTIC PROPERTIES OF EQUIMOLAR MIZTURES OF OXIDES OF THE TYPE $V_2O_x \cdot MO_y$.
Oct 62 [4]p. 19 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Revista de Chimie (Rumania) 1962 [v. 13] no. 1, p. 16ff.

DESCRIPTORS: *Catalysts, *Vanadium catalysts, Uranium compounds, Molybdenum compounds, Silver compounds, Cobalt compounds, Hydrocarbons, Oxidation, Dehydration, Dehydrogenation, *Chemical engineering.

Porcsalmy, Ilona.
THE SPECIFIC HEAT OF TOBACCO. [1962] 2p.
Order from K-H $2.50 K-H 3160 h

Trans. of Revue Internationale des Tabacs (France) 1954, v. 29, p. 37.

DESCRIPTORS: *Tobacco, *Specific heat.

Rado, R.
CONTROLLED DECOMPOSITION OF POLYPROPYLENE.
Oct 62 [5]p. 6 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Chemicky Prumysl (Czechoslovakia) 1962 [v. 12(37)] 1962, no. 4, p. 209ff.

DESCRIPTORS: Polymers, *Propenes, Decomposition, Reaction kinetics, Peroxides, *Chemical engineering.

Rebinder, P. A. and Semenenko, N. A.
ON THE PENETRATING CONE METHOD TO CHARACTERIZE THE STRUCTURAL-MECHANICAL PROPERTIES OF VISCO-PLASTIC BODIES. [1961] 6p. 12 refs. MDF R-101.
Order from OTS $0.50 62-11643

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1949, v. 64, no. 6, p. 835-838.

DESCRIPTORS: *Colloids, Shear stresses, Viscosity, *Fats, *Greases, Plastic flow, *Viscoelasticity.

The method of the conical plastometer can be recommended as a convenient device for the investigation of dispersed structures and has already obtained widespread use in the fat industry, in the investigation of consistent greases and solid dispersed materials.

Steinberg, Karl.
THE HALL EFFECT IN CUPROUS IODIDE CONTAINING COPPER. [1962] 16p. (figs. omitted) 8 refs.
Order from SLA $1.60 62-18485

Trans. of Ann[alen] d[er] Physik (Germany) 1911 [ser. 4] v. 35, p. 1009-1033.

DESCRIPTORS: *Hall effect, *Copper compounds, *Iodides, Copper, *Electrical conductance, Magnetic properties.

Syrkin, Ya. K. and Godnev, I. N.
THE COMBINED EFFECT OF RADIATION AND CATALYST (K Vorposu o Sovmestnom Deistvii Izlucheniya i Katalizatora). [1962] [12]p. 5 refs.
Order from OTS or SLA $1.60 AEC-tr-5153

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1934, v. 5, [no. 1] p. 32-37.

DESCRIPTORS: *Photochemistry, Hydrogen compounds, *Peroxides, Decomposition, *Ultraviolet radiation, *Catalysts, *Platinum catalysts, Colloids, Reaction kinetics.

The kinetics of the combined effect of a platinum sol and ultraviolet radiation on the decomposition of hydrogen peroxide in solution were investigated at 19.5°, 29° and 38°C. The energy increment from the Arrhenius equation is about 7700 to 8000 cal. in both cases. The decomposition of peroxide on colloidal platinum is satisfactorily represented by a Langmuir absorption equation. (Author)

Tibilov, S. P.
A STUDY OF THE ADSORPTION OF ORGANIC VAPORS ON AN ORGANIC ADSORBENT FROM THE QUENCHING OF FLUORESCENCE (Izuchenie Adsorbsii Organicheskikh Parov na Organicheskikh Adsorbentakh po Tusheniyu Fluorestsentsii). [1962] 20p. 15 refs
Order from OTS or SLA $1.60 AEC-tr-5228

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1940, v. 14, [no. 7] p. 953-963.
An abstract trans. is available from OTS or SLA, $1.10 in 61-20347 [1961] [7]p.

DESCRIPTORS: *Photochemistry, *Fluorescence, Adsorbents, Gels, Fatty acids, Formaldehydes, Vapors, Quinones, Benzenes, Anilines, Butanones, Nitrobenzenes, Carbon tetrachloride, Chloroform, Acetones, Ethanes, Bromides, Water vapor, Carbon compounds, Monoxides, Carbon dioxide, Oxygen, Ammonia.
The method of fluorescence quenching was used to study the adsorption of gaseous quinone, nitrobenzene, aniline, dimethylaniline, diacetyl, CCl_4, chloroform, acetone, benzene, chlorobenzene, ethyl bromide, H_2O, CO, CO_2, O_2, NH_3 and air on paraffin gel, palmitic acid and paraformaldehyde as a function of the vapor pressure of the adsorbate. The fluorescence quenching of the adsorbent is due to a process of removal of excitation energy by the adsorbed vapor molecules. Of the substances listed above only the first six quench the fluorescence of all three adsorbents. Quinone and nitrobenzene have the highest quenching ability. One and the same substance quenches the fluorescence of all three adsorbents in about the same fashion. This behavior points to an identical nature of the fluorescence centers or, what is the same thing, of the adsorption centers of all the adsorbents. An elementary statistical analysis of the fluorescence process was carried out. (Author)

Ukaji, Rokuo.
THE INFLUENCE OF SPECIFIC SURFACE AREA UPON THE REACTIVITY OF URANOURANIC OXIDE. [Pt.] 3 of On the Reactivity of Uranouranic Oxide.
July 62, 8p. 12 refs.
Order from OTS $0.50 AEC-tr-5073

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 7] p. 389-393.

DESCRIPTORS: *Uranium compounds, Oxides, Sintering, Heat treatment, Surface area, Density.

A study is made of the decreases in specific surface areas (sintering behavior) which took place when three kinds of U_3O_8 were thermally treated at various degrees of high temperature, and the changes in reactivity due to such heat treatment were examined. (Author) (See also 62-11729)

Ukaji, Rokuo.
ON RELATION BETWEEN REACTIVITY OF URANO-URANIC OXIDES AND CONDITION OF PREPARATION. [Pt.] 5 of On the Reactivity of Uranouranic Oxide.
July 62, 7p. 9 refs.
Order from OTS $0.50 AEC-tr-5072

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 12] p. 731-735.

DESCRIPTORS: *Uranium compounds, Oxides, Preparation, Pyrolysis.

A study was made of changes in reactivity with various conditions of preparation of U_3O_8 I, II, and III. Such conditions are related to the kinds of source materials, conditions of preparation of such materials, temperature of thermal decomposition, rate of temperature rise to attain this temperature, duration of thermal decomposition, its atmosphere, and additives for thermal decomposition. Since reports have already been published on the atmosphere and additives and various source materials, the paper deals with the other conditions. (Author) (See also 63-11356).

Ukaji, Rokuo.
STUDY OF THE SURFACE STRUCTURE OF URANO-URANIC OXIDE POWDER BY ELECTRON MICROSCOPE-REPLICA METHOD AND X-RAY DIFFRACTION METHOD. [Pt. 4 of On the Reactivity of Uranouranic Oxide. July 62, 8p. 12 refs.
Order from OTS $0.50 AEC-tr-5070

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2, p. 598-602.

DESCRIPTORS: *Uranium compounds, Oxides, Electron microscopy, X-ray diffraction analysis, Surface porperties, Density, Lattices.

The results are reported of the study on the form and structure of the particles of U_3O_8(I-III) which the author conducted by means of an electron microscope and a powder X-ray diffraction device. U_3O_8(I) showed the smallest degree of broadening of diffraction lines. In the cases of U_3O_8(II, III), broadening of their diffraction lines was noticed, and there was a difference in their broadening. Such differences in the broadening of the diffraction lines of the three are supposed to be attributable to differences in grain structure between specimens. Meanwhile, the degree of the broadening of the above-mentioned diffraction lines and reactivity per unit surface area changed almost in parallel with each other. It can be said that the peculiarity of grain structure is an important factor contribution to reactivity. (Author) (See also 63-11538)

Veselovskii, V. K.
STABILITY AND VOLATILITY OF TIN OXIDES (Ustoichivost' i Letuchest' Okislov Olova) tr. by Sergey Shewchuck. Apr 62, 50p. (foreign text included) 44 refs.
Order from OTS or SLA $4.60 UCRL Trans-821(L)

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1943, v. 16 [no. 11/12] p. 397-416.
An abstract trans. is available from OTS or SLA $1.10 in 62-14153 [1961] 7p.

DESCRIPTORS: *Thermochemistry, *Thermodynamics, *Tin compounds, Oxides, Stability, Vaporization, Phase studies.

The contents of this article is divided into three parts: In the first there is presented thermodynamic analysis of the system "tin-stannous oxide-stannic oxide" and the conditions and limits of coexistence are derived for all condensed phases; in the second the experimental data are presented on the volatility of stannous oxide as obtained by the effusion method; comparisons are made of all the thermodynamic quantities and calculations of entropy of gaseous suboxide from the molecular and spectroscopic constants; in the third part one of the application possibilities of the obtained results is shown for calculating conditions of the metallurgical process.

Voskoboinikov, I. M. and Sosnova, G. S.
DETONATION OF MIXED EXPLOSIVE SUBSTANCES, tr. by Helen J. Chick and Charles L. Mader. [1962] 8p 2 refs.
Order from OTS or SLA $1.10 AEC-tr-5100

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 4, p. 133-135.

DESCRIPTORS: *Explosive materials, Mixtures, *Detonation, RDX, TNT, DNT, Nitroglycerin, Hexanes, Methanes, Nitro radicals, Nitrobenzenes, Methanol, Ammonium radicals, Nitrates.

In the detonation wave of mixed charges each explosive is able to decompose with the same composition of the detonation products which there would be in the detonation wave of a charge which consisted only of this component. In the dependence on the dispersion of the mixture the decomposition products of the separate components react among themselves (liquid explosive solutions and mixtures in ammonium nitrate) or do not react (the majority of solid mixtures and suspensions) in the detonation wave front. Increase of dispersion of the components of the mixture promotes the reaction between the decomposition products of the separate components. (Author)

Wojtczak, J.
INVESTIGATION OF THE PHOTOCHEMICAL OXIDATION OF COLLOIDAL COPPER. [1962] 6p.
Order from ATS $9.25 ATS-10P66P

Trans. of Roczniki Chem[ii] (Poland) 1962, v. 36, no. 4, p. 929-936.

DESCRIPTORS: *Copper, *Colloids, Oxidation, *Photochemistry.

Zannetti, R., Manaresi, P., and Baldi, L.
THE ABSORPTION OF BETA RADIATION BY POLYMERS AND THE DETERMINATION OF THE TEMPERATURE OF PHASE AND ISOPHASIC TRANSITIONS. Jan 63, 3900 words, 5 refs.
Order from CTS(Chem) $15.60 CTS(Chem)-313
subsequent copies $2.60/ea.

Trans. of [Ia] Chimica e [I']Industria (Italy) 1962, v. 44, no. 10, p. 1114-1120.

DESCRIPTORS: *Polymers, *Beta particles, Absorption, *Phase transitions, Temperature, Determination, Ethylenes, Phalates, Styrenes, Butadienes, Butenes, Propenes, Inorganic substances.

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 60 (EARTH SCIENCES SERIES). 28 Jan 63 [20]p. JPRS: 17320.
Order from OTS or SLA $1.60 63-15381

Consists of abstracts of articles from the scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Literature, Hungary, Geophysics, *Geodesics, Mapping, Climatology, *Meteorology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 62 (EARTH SCIENCES SERIES). 31 Jan 63 [11]p. JPRS: 17392.
Order from OTS $0.50 63-21025

Abstract trans. of Natura (Rumania) 1962, v. 14, no. 6, p. 3-80.

DESCRIPTORS: *Abstracts, Literature, Rumania, *Geography, *Geology, Hydrology, Black Sea, Teaching.

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR. EARTH SCIENCES SECTION, 1960, VOL. 134, NOS. 1-6. Sep 61, 1v.
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 134, no. 1, p. 85-[87] 153-[178]; no. 2, p. 341-[344] 404-[438]; no. 3, p. 578-[581] 647-[693]; no. 4, p. 806-[815] 895-[934] 939-[941]; no. 5, p. 1065-[1078] 1158-[1195]; no. 6, p. 1339-[1346] 1410-[1435].

DESCRIPTORS: Earth, *Geochemistry, *Geology, *Geophysics, *Hydrology, *Stratigraphy, *Mineralogy, *Paleoecology, *Permafrost, *Petrology.

Bulanzhe, Yu. D., ed.
GRAVIMETRIC RESEARCH (Gravimetricheskie Issledovaniya). 31 Jan 61 [69]p. 28 refs. JPRS: 7384.
Order from OTS or SLA $6.60 61-21015

Trans. of Gravimetriya: Sbornik Statei (USSR) 1960, no. 1, p. 5-62.

DESCRIPTORS: *Gravity, Measurement, *Geophysics, *Tides, Earth, Deformation, Geodesics, Diurnal variations, Scientific research, Densimeters.

Contents:
Tidal variations in gravity at Pulkovo in 1958, by Yu. S. Dobrokhotov and others
Gravimetric polygon and adjustment of some reference points in Leningrad, by Yu. S. Dobrokhotov
Tidal variations in gravity at Krasnaya Pakhra, by N. N. Pariiskii and others
Tidal variations in gravity at Alma-Ata, by N. N. Pariiskii and others
Determination of scale factors in recording observations of tidal variations in gravity, by B. P. Pertsev
A correction for vertical acceleration in observations of tidal variations in gravity, by N. N. Pariiskii
Tidal tilts of the earth's surface according to observations at Kondara in 1958, by A. E. Ostrovskii and others
Results of observations of tidal tilting of the earth's surface in Kounrad in 1957, by A. E. Ostrovskii and others
Tidal tilts of the earth's surface according to observations at Ashkhabad in 1957 and 1958, by A. E. Ostrovskii and others
Obersvations of tidal tilts of the earth's surface at Poltava in 1958, by A. E. Ostrovskii and others
Gravimetric polygon at Moscow State University, by Yu. S. Dobrikhotov and others.

Mansurov, S. M.
GEOMAGNETIC SECULAR VARIATION IN EAST ANTARCTICA, tr. by E. R. Hope. Oct 62 [6]p. 6 refs. DSIS T 375 R.
Order from NRCC NRCC C-4182

Trans. of mono. Geomagnitnye Vozmushcheniya (Geomagnetic Disturbance) Moscow, 1960, p. 48-52.

DESCRIPTORS: *Terrestrial magnetism, *Antarctic regions, Periodic variations, Geophysics.

Polyak, L. S. and Rapoport, M. B.
CORRELATION BETWEEN ELECTRICAL AND ELASTIC PROPERTIES OF SEDIMENTARY ROCKS. [1962] [20]p. 6 refs.
Order from OTS or SLA $1.60 62-18544

Trans. from Prikladnaya Geofizika (USSR) 1956, no. 15.

DESCRIPTORS: *Sedimentary rock, Elasticity, Electrical properties, Statistical functions, Well logging.

There is a high degree of correlation between the recoil energy and porosity of elastic rocks. The conductivity and elasticity of such rocks depend upon porosity; there is, therefore, a correlation between resistivity and elastic wave velocity. The analysis of a large body of experimental data shows a correlation of 0.7 between resistivity and accoustic rigidity, and a correlation of 0.65 between conductivity and pressure wave velocity. The correlation between conductivity and the elastic properties of sedimentary rocks can be utilized for practical purpose - for the synthesis of seismic-geologic cross-sections from experimental elasticity data, for the analysis of velocity log data, and the interpretation of (profile) seismic data. (Author)

Climatology and Meteorology

Budyko, M. I., Efimova, N. A. and others.
RADIATION BALANCE OF THE NORTHERN HEMISPHERE. 7 Nov 62 [18]p. 10 refs. FTD-TT-62-1340.
Order from OTS or SLA $1.60 63-13880

Unedited rough draft trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1961, no. 1, p. 3-12.

DESCRIPTORS: *Geophysics, *Solar radiation, Absorption, Reflection, Distribution, Mans.

Koshelenko, L. V.
SOME RECOMMENDATIONS IN FORECASTING RADIATION FOG. [1961] 12p. (figs. tables omitted) 8 refs. Trans. no. 82 [DSIR] NLL M. 3114.
Order from OTS or SLA $1.60 62-24880

Unedited trans. of Ukr[ainskii] Nauc[hno]-Issled [ovatel'skii] Gidro-Met[eorologicheskii] Inst[itut]. Trudy, 1959, v. 11, p. 42-51.

DESCRIPTORS: *Fog, *Weather forecasting, Moisture, Turbulence, Cooling, Clouds, Dew point.

Kozlov, V. P.
THE POSSIBILITY OF USING CORRELATION ANALYSIS FOR THE STATISTICAL ANALYSIS OF MICROPHOTOGRAPHS OF CLOUD DROPS [AND] ON THE POSSIBILITY OF OPTICAL MODELLING OF INTEGRAL CONVERSIONS. [1962] [9]p. 3 refs. [DSIR] NLL M. 4822.
Order from OTS or SLA $1.10 62-24866

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1961, no. 1, p. 160-161, and Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1961, v. 4, no. 2, p. 111-116.

DESCRIPTORS: Meteorology, *Clouds, Moisture, Microphotography, Statistical analysis, *Optical systems, *Analog systems, Models (Simulations).

Nikandrova, G. T.
VARIATION IN THE MICROSTRUCTURE OF VARIOUS TYPES OF CLOUDS WITH HEIGHT. [1962] 10p.
Order from ATS $12.50 ATS-22P65R

Trans. of Gl[avnaya] Geofiz[icheskaya] Observ[atoriya, Leningrad]. Tr[udy] (USSR) 1962, no. 126[188] p. 70-78.

DESCRIPTORS: *Clouds, *Microstructure, Height finding.

Rink, Josef.
USE OF RADAR TECHNOLOGY IN METEOROLOGY. 30 Nov 62 [6]p. (figs. omitted). JPRS: 16440.
Order from OTS or SLA $1.10 63-13312

Abstract trans. from Meteorologischer und Hydrologischer Dienst. Abhandlungen (East Germany) 1962, v. 9, no. 65, 63p.

DESCRIPTORS: *Meteorology, Radar equipment, Meteorological balloons, Meteorological instruments, *Meteorological radar, *Weather communications.

Geodesy

GEOPHYSICAL EXPLORATION, 1961, NO. 6: SELECTED ARTICLES. 1 Feb 63 [26]p. JPRS: 17412.
Order from OTS $0.75 63-21034

Trans. of Geofizicheskaya Razvedka (USSR) 1961, no. 6, p. 47-59, 93-95, 118-124

DESCRIPTORS: *Geophysical prospecting, *Geodesics, *Gravity, *Aerial photography, *Mapping, Topographic cameras, *Helicopters, Barometers, Leveling rods, Thermostats, Height finding, Errors, Geophysics.

Contents;
The use of helicopters in two-milligal gravimetric surveys in the tundra, by B. D. Poletaev
Experience in the use of the MI-1 helicopter in conducting a gravimetric survey in conjunction with barometric levelling, by B. P. Borodin and others
The GAK-3M gravimeter with electrical thermostat, by A. N. Timofeev and V. N. Rozenberg
On the accuracy of altitude determinations from topographic maps during regional gravimetric surveys, by A. P. Egorov.

PROBLEMS OF AEROMAGNETIC AND MARINE EXPLORATION IN THE USSR. 7 Dec 62 [17]p. JPRS: 16568. NASA N63-10979
Order from OTS or SLA $1.60 63-13464

Trans. of Razvedochnaya i Promyslovaya Geofizika (USSR) 1962, v. 44, p. 111-116 and 123-126.

DESCRIPTORS: *Maps, Aerial photography, Geodesics, Magnetic fields, *Marine geophysics, Radio stations.

Contents:
Some problems in compiling the 1:1,000,000 composite map of magnetic anomalies of the USSR, by M. A. Vasil'eva and I. I. Vlasova
Application of radiogeodetics in marine geophysical exploration, by V. F. Gurevich.

Pochtarev, V. I.
STRUCTURE OF THE FIELD OF GEOMAGNETIC SECULAR VARIATIONS. 23 Oct 62, 2p. AID rept. 62-167; [NASA N62-17618] AD-288 049.
Order from OTS or SLA $1.10 63-13038

Abstract trans. of Geomagnetizm i Aeronomiya (USSR) 1962, v. 2, no. 3, p. 523-526.

DESCRIPTORS: *Terrestrial magnetism, Magnetic fields, Harmonic analysis, Earthquakes.

Secular variations of the geomagnetic field δf, amounting to one one-thousandth of the value of the field, are of complex character in their course and geographical distribution, but they can be satisfactorily represented by means of spherical harmonic series, as in the following combined method: First, harmonic analysis of δf is performed for a series of latitudes at 20° intervals in order to separate the general planetary part δf_0 from the field. Then graphical division is made for the analysis of the residual field $\delta f - \delta f_0$. The field of complicated structure is thus consecutively divided into its component parts: the planetary part, related to variation of the general magnetic moment of the earth; the global part, related to variation of the magnetic moment of large areas comprising millions of square kilometers; the regional part, related to variation of magnetic properties over individual regions comprising tens and hundreds of square kilometers; and the local part, related to variation in magnetic properties over very limited areas of the earth. The field of complicated structure, when divided into its component parts, is thus simpler in form and easier to analyze.

Popov [Yu.] V. [Adrianova, I. I., and Korolev, I. A.].
LICHTENTFERNUNGSMESSER MIT KLEINEN ABMESSUNGEN (Optical Rangefinder with small Dimensions). 8p. (text in German).
Order from TIB $1.55

Trans. of #Geodeziya i Kartografiya (USSR) 1961, no. 3, p. 7-[12].

DESCRIPTORS: *Rangefinding, Light.

Geology

GEOCHEMISTRY, 1961, NO. 8, P. 691-785. [1962] 1v.
Order from The Geochemical Society, Dr. Earl Ingerson, U. of Texas, Austin, 12, Texas, $4.00, $20.00/year

Trans. of Geokhimiya (USSR) 1961, no. 8.

DESCRIPTORS: *Geochemistry, Atoms, Volume, *Actinium, *Radium, Minerals, *Petrology, *Apatite, Physical properties, Rare earth elements, Strontium, *Thallium, Deposits, Ores, Distribution, Sulfides, Metals, Water, *Bromine, *Geologic age determination, *Igneous rock, Conferences.

INTERNATIONAL GEOLOGY REVIEW, VOL. 3, NO. 3, P. 187-277. Mar 61, 1v. 313 refs.
Order from AGI $5.00, $55.00/year

Trans. of Mineralogicheskii Sbornik (USSR) 1959, v. 13, p. 139-148, 282-290; Schweizer[ische] Mineralogische und Petrographische Mitteilungen, 1959, v. 39, p. 1-84; Priroda (USSR) 1960 [v. 49] no. 6, p. 75-77; Chishitsugaku Zasshi (Japan) 1959, v. 65, no. 786, p. 398, 401-404, 412-462.

DESCRIPTORS: Periodical, *Geology, Rock (Geology), Metamorphic rock, Manganese, Tourmaline, Minerals, Petrology, Deposits, Symposia

Contents:
The role of metasomatism in the formation of alkaline rocks, by E. L. Butakova
Manganese tourmalines, by M. M. Slivko
Syngenesis and epigenesis in petrography and the study of mineral deposits, pt. 2, by G. C. Amstutz
The riddle of tektites, by G. G. Vorobev
Selected proceedings and abstracts of papers read before the Geological Society of Japan at the 66th annual meeting, 8-9 Apr 59
Reference section.

Beloussov, V. V.
PRINCIPLES OF GEOTECTONICS, REV. ED., tr. by Paul T. Broneer. 1962, approx. 700p.
Order from McGraw-Hill Book Co., Inc., 330 West 42d St., New York, 36, N. Y. approx. $10.00

Trans. of mono. [Osnovnye Voprosy Geotektoniki, rev. ed., Moscow, n.d.].

DESCRIPTORS: *Geogeny, Geodesics.

Ryabukhin, G. E.
BITUMINOUS HORIZONS OF THE EASTERN SLOPE OF URAL AND WEST SIBERIAN PLAIN. [1962] [1]p.
Order from OTS or SLA $1.10 62-16767

[Abstract] trans. of Akademiya Nauk SSSR. Doklady, 1943, v. 41, no. 3, p. 131-133.

DESCRIPTORS: *Geophysical prospecting, Petroleum, Well drilling, Deposits, Bitumens, Siberia.

Strakhov, N. M. and Zalmanzon, E. S.
DISTRIBUTION OF AUTHIGENO-MINERALOGICAL FORMS OF IRON IN SEDIMENTARY ROCKS AND ITS SIGNIFICANCE TO LITHOLOGY. [1962] 30p. (figs. omitted).
Order from OTS or SLA $3.60 62-18534

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya, 1955 [v. 20] no. 1, p. 34-51.

DESCRIPTORS: *Iron, Distribution, *Rock, Petrology, *Geology, Genetics, Geological survey.

Vistelius, A. B.
THE SUB-DIVISION OF FOSSIL-LESS STRATA ON THE BASE OF QUANTIATIVE MINERALOGICAL, PETROGRAPHICAL, OR CHEMICAL CHARACTERS (Raschlenenie Nemykh Tolshch po Kolichestvennym Mineralogicheskim, Petrograficheskim ili Khomicheskim Priznakam). [1962] [43]p. (foreign text included) 11 refs.
Order from OTS or SLA $4.60 62-18525

Trans. of Vsesoyuznoe Mineralogicheskoe Obshchestvo. Zapiski (USSR) 1957, v. 86, no. 1, p. 99-115.

DESCRIPTORS: Geology, Paleoecology, Geochemistry, *Geological age determination, *Minerals, *Chemical analysis, *Stratigraphy.

A method is presented which permits a separation of formations in the layer of a sedimentary stratum according to quantitative characteristics and their analysis in a small number of samples. This method, essentially ensures that the formations, separated during the first sampling, are preserved in the layer for the second sampling. Since the layer of the sedimentary stratum is, as a rule, homogenous, and characteristic layers which are representative for the rayon are selected for subdivision of the layer into formations, thus the division even of a single rayon, performed by the recommended method, appear, as a rule, as division of the stratum in the adjacent rayon. (Author)

Mineralogy

D'Ans, J. and Knütter, R.
RANGES OF EXISTENCE OF DICALCIUM PHOSPHATES AND APATITE IN THE SYSTEM $Ca(OH)_2$-H_3PO_4-H_2) AT 25°C, tr. by Bertha P. Klenova. 16 Mar 54, 8p. 18 refs. TVA 3265.
Order from OTS or SLA $1.10 62-25801

Trans. of Angew[andte] Chem[ie] (West Germany) 1953, v. 65 [no. 23] p. 578-581.
Another trans. is available from ATS $9.20 as ATS-39L30G [1959] 7p.

DESCRIPTORS: *Minerals, *Apatite, *Calcium compounds, *Phosphates, Hydroxides, Solubility, Chemical precipitation, Crystallization.

Determinations of the stable and metastable solubilities of $CaHPO_4 \cdot 2H_2O$, and of the stable solubilities of hydroxyapatite and $CaHPO_4$, at 25° C, are discussed. The conditions prevailing during the conversion, $CaHPO_4 \cdot 2H_2O \rightarrow CaHPO_4 + (2H_2O$ solution), are explained. A simple method is proposed for the quantitative precipitation of calcium as the oxalate in the presence of phosphate ions. (Author)

Krauskopf, Konrad B.
SUMMARY ABOUT MODERN VIEWS ON THE PHYSICAL CHEMISTRY OF METAL FORMING SOLUTIONS. [1962] 12p. 24 refs.
Order from SLA $1.60 62-18214

Trans. of die Naturwissenschaften (West Germany) 1961, v. 48, p. 441-445.

DESCRIPTORS: *Physical chemistry, Metals, Solutions, *Ores (Metal sources), *Ores (Non-metallic), Rock (Geology), Geochemistry, Mineral products.

Platonov, N. Kh.
NEW MINERAL FORMATIONS IN THE COURSE OF CONTACT METAMORPHISM OF OIL-BEARING MARLS. [1962] [1]p. 1 ref.
Order from OTS or SLA $1.10 62-16777

[Abstract] trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1941, v. 33, no. 5, p. 358-362.

DESCRIPTORS: Geology, *Minerals, Petroleum, Sources, Deposits.

Oceanography

Bruevich, S. V. and Lyutsarev, S. V.
CO_2 CONTENT OF THE ATMOSPHERE ABOVE THE PACIFIC AND INDIAN OCEANS, AND IN THE REGION OF THE BLACK SEA. [1962] [4]p. 4 refs.
Order from OTS or SLA $1.10 62-18638

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136 [no. 2] p. 405-407.

DESCRIPTORS: *Carbon dioxide, *Atmosphere, Pacific Ocean, Indian Ocean, Black Sea, *Chemical analysis, Oceanographical data.

These observations, made by use of a chemical method, are in full agreement with analogous determinations in Scandinavia (Stockholm and Helsinki), and also the data of other investigators, using direct chemical determinations, being at the same time in considerable disagreement with the results of determining CO_2 by means of infrared analyzers. The latter observations, made by American oceanographers, show smaller absolute values and insignificant differences of CO_2 content in the atmosphere in the very great range of latitude from Antarctica to Alaska, and also according to the time of year. The CO_2 content at "Little America" (Antarctic), Hawaii, and the Alaskan region in springtome was found in the range of $313\text{-}315 \cdot 10^{-6}$, late summer and autumn in the range $310\text{-}313 \cdot 10^{-6}$, and only in the Arctic Ocean it fell to $307 \cdot 10^{-6}$. (Author)

Al'tshuler, V. M. and Vladimirov, O. A.
G. V. POLUKAROV'S METHOD USED TO CALCULATE THE SEMI-DIURNAL (M_2) TIDE IN THE BAFFIN SEA AND DAVIS STRAIT (Vychislenie Polusutochnogo Priliva (M_2) v More Baffina i Devisovom Prolive Metodom G. V. Polukarova). July 62 [6]p. 4 refs. RTS 2094.
Order from OTS or SLA $1.10 62-32481

Trans. of Gosud[arstvennyi] Okean[ograficheskii] Institut. Trudy (USSR) 1961, v. 64, p. 112-117.

DESCRIPTORS: *Tides, Ocean waves, Diurnal variations, Harmonic analysis, *Atlantic Ocean, Numerical methods and procedures.

The present article quotes results from a calculation of tidal level fluctuations in the area of the Baffin Sea and the Davis Strait, using the method of boundary values. (Author)

Gol'din, M. I.
DEEP SEA MICROBES. [1962] 18p.
Order from OTS or SLA $1.60 62-20194

Trans. of Nauka i Zhizn' (USSR) 1960 [v. 27] no. 9, p. 37-40, 50.
Another trans. is available from OTS $1.00 in 61-31462, JPRS-4634, 22 May 61, 31p.

DESCRIPTORS: Marine Biology, *Microorganisms, *Ocean bottom sampling, Ocean bottom, *Bathythermograph data, Ocean currents, *Plankton, Ecology.

Paramonov, A. N.
USE OF THE PRINCIPLES OF A DISCRETE COUNTER FOR TRANSMITTING DATA OF DEEP WATER MEASUREMENTS. [1962] [7]p. [DSIR] NLL M. 4823.
Order from OTS or SLA $1.10 62-24867

Trans. of Okeanologiya (USSR) 1961 [v. 1] no. 4, p. 710-716.

DESCRIPTORS: *Oceanographic equipment, *Depth indicators, Transducers, Underwater sound, Counting methods, Underwater radio transmission, Electronic equipment, Circuits.

Petelin, V. P.
A NEW METHOD OF HYDROUS MECHANICAL ANALYSIS OF MARINE SEDIMENTS. [1962] 15p. 11 refs.
Order from OTS or SLA $1.60 62-20245

Trans. from [Okeanologiya] (USSR) 1961, v. 1, no. 1.

DESCRIPTORS: Analysis, *Sedimentation, Water, Marine geology, Oceanology, *Ocean bottom sampling.

Sokolov, O. A.
VISUAL UNDERWATER OBSERVATIONS IN THE FIFTH VOYAGE OF SUBMARINE "SEVERYANKA". [1962] [5]p. [DSIR] NLL M. 4827.
Order from OTS or SLA $1.10 62-24871

Trans. of Okeanologiya (USSR) 1961 [v. 1] no. 4, p. 757-761.
Another trans. is available from OTS or SLA $2.60 in 62-19789, JPRS-12551, 19 Feb 62 [28]p.

DESCRIPTORS: *Oceanographic vessels, *Submarines, *Marine biology, *Underwater photography, Underwater lights, Visibility, Measurement.

Tsyplukhin, V. F., Samarin, V. G., and Sergeev, V. A.
GRADIENT MEASUREMENTS OF PRESSURE FLUCTUATIONS IN A SURFACE SEA LAYER BY MEANS OF A WAVE MEASURER FROM ON BOARD SHIP. [1962] [9]p. 27 refs. [DSIR] NLL M. 4820.
Order from OTS or SLA $1.10 62-24865

Trans. of Okeanologiya (USSR) 1961, v. 1, no. 3, p. 522-530.

DESCRIPTORS: *Marine geophysics, *Water waves, *Ocean waves, Pressure, Oscillations, Measurement, *Oceanographic equipment, Design, Oceanographic vessels.

Seismology

Lavergne, M. and Chauveau, J.
TRANSFER FUNCTIONS OF PIEZOELECTRIC TRANSMITTERS AND RECEIVERS FOR SEISMIC MODELS. [1962] 13p. 7 refs.
Order from SLA $1.60 62-14436

Trans. of Acustica (Switzerland) 1961, v. 11, no. 3, p. 121-126.

DESCRIPTORS: *Seismic waves, Models (Simulations), *Wave transmission, *Piezoelectric crystals, Ultrasonics, *Acoustics.

The transfer functions on transmission and reception are calculated for cylindrical piezoelectric pellets vibrating parallel to their axes. It was possible to define the initial electric pulses and to determine the acoustical impedances of materials to be applied to the surfaces of the pellets in order to obtain pulses of desired form. (Author)

Schulze, G. A. and Trappe, H. J.
THE PLOTTING OF SALT FLANKS WITH SEISMIC METHODS (Das Kartieren von Salzflanken mit Seismischen Methoden). [1962] [8]p. (foreign text included) 1 ref.
Order from SLA $1.10 62-16524

Trans. of Erdöl und Kohle (West Germany) 1956, v. 9, no. 9, p. 580-583.

DESCRIPTORS: *Geophysical prospecting, *Salts, Deposits, *Stratigraphy, Test methods, *Seismic waves.

Umarov, Yu. R.
AN INSTRUMENT FOR INVESTIGATING THE BEHAVIOR OF MECHANICAL SYSTEMS EXPOSED TO DYNAMIC LOADS. 5 July 62 [19]p. 16 refs.
FTD-TT-62-875. AD-283 873
Order from OTS or SLA $1.60 62-32684

Unedited rough draft trans. of Akademiya Nauk Uzbekskoi SSR [Tashkent]. Izvestiya. Seriya Tekhnicheskikh Nauk, 1961, no. 5, p. 30-39.

DESCRIPTORS: *Analog systems, Electrical equipment, Phototubes, Seismic waves, *Mechanical waves, *Earthquakes, Oscillation, Seismographs, Load distribution, Photoelectric cells.

A photoelectric instrument is described which produces the response curve of a certain mechanical system to oscillatory motion which is recorded as an accelerogram. The operational principle of the instrument is that of an electric analog of a mechanical system with one degree of freedom. An external emf is applied whose magnitude varies in time in proportion to the acceleration of rapidly changing processes, in particular an earthquake. The external mechanical action determinable by the accelerogram is converted into the emf of an electrical system by a photoelectric converter. (Author)

ENGINEERING

MINING AND METALLURGY QUARTERLY, 1962, NO. 2. 1962, 74p. PL-480 Int.
Order from OTS $0.75 62-19467-2

Trans. of Rudarsko-Metalurski Zbornik (Yugoslavia) 1962, no. 2, p. 97-159.

DESCRIPTORS: Mining engineering, Metallurgy, Periodicals, *Semiconductors, *Pyrites, *Arsenic, *Autoradiography, *Metallography, Mines, *Hoists, Automatic, Control.

Contents:
Chalcopyritic semiconductors, by S. M. Zalar
The USBM from the standpoint of organization and its contribution to mining research, by V. Kersnic
Autoradiography by As76 in metallography: the distribution of arsenic in Pb-Sn-Sb bearing alloys, by K. Kosovinc
Principles of the automatic control of mine hoists, by J. Kernc.

Arsenev, V. F. and Tsudinov, V. I.
KOHLENSTAUBBEKÄMPFUNG BEIM MASCHINELLEN STRECKENVORTRIEB (Struggling against Coal Dust during Mechanical Drifting). (text in German).
Order from TIB $0.70

Trans. of Ugol'(USSR) 1961 [v. 36] no. 11, p. 52.

DESCRIPTORS: Mines, *Coal dust.

Glushko, Ya. M.
CONCERNING THE PROBLEM OF DETERMINING THE DYNAMIC STRESSES IN A MINE HOISTING CABLE OF VARIABLE LENGTH (K Voprosu ob Opredelenii Dinamicheskikh Usilii v Shakhtnom Pod'emnom Kanate Peremennoi Dliny). May 62 [14]p. 5 refs. RTS 2088.
Order from OTS or SLA $1.60 62-25466

Trans. of N[auchno]-I[ssledovatel'skii] I[nstitut po Bezopasnosti Rabot v Gornoi Promyshlennosti]. Trudy (USSR) 1960, v. 11, p. 239-248.

DESCRIPTORS: *Hoists, *Cables (Mechanical), Stresses, Determination, Dynamics, Load distribution, Mining engineering, Numerical analysis, Differential equations.

Gunne, Kh. E.
RADIOACTIVE CONTROLLING, SIGNALLING AND RECORDING DEVICES: EXTRACT (Radioaktivnye Kontrol'nye, Signaliziruyushchie i Registriruyushchie Ustroistva). [1962] [7]p. (figs. omitted) 3 refs. [Warren Spring Lab.] Trans. NT 662; DSIR NLL M. 4860.
Order from OTS or SLA $1.10 62-25382

Partial trans. (p. 124-135) of Akad[emiya] Nauk Latv[iiskoi] SSR, [Riga]. Inst[itut] Fiz[iki]. Trud[y] 1956, v. 9, p. 105-135.

DESCRIPTORS: Instrumentation, Radioactivity, *Thermometers, *Control systems, *Temperature control, Signals, Voltmeters, Test equipment.

Ivakhnenko, Aleksei Grigor'evich.
ENGINEERING CYBERNETICS, 2D ED. 11 Jan 63 [625]p. 92 refs. JPRS: 17092.
Order from OTS or SLA $26.00 63-15109

Trans. of mono. Tekhnicheskaya Kibernetika, 2d ed., Kiev, 1962, 422p.

DESCRIPTORS: Engineering, Machines, *Control systems, *Cybernetics, *Automation, Programming, Computer logic, Relays, Circuits, Artificial intelligence, Information theory, Memory devices, Feedback, Nonlinear systems, Servosystems, Stabilization systems, Interference, Resistance.

Contents:
Automation and engineering cybernetics
Logical elements for simple relay cybernetic systems
Cybernetic systems with internal changes in setting (adjustments)
Cybernetic systems with internally changing programs of algorithms
Cybernetic systems with internally changing parameters
Cybernetic systems with internally changing nonlinear characteristics or conbersion algorithm
Cybernetic systems with internal change of structure
Basic problems of the general theory of cybernetic automatic control systems
Increasing resistance to interference of systems
Combined control as the general case of control of state and quantity

Kovalev, P. F.
EXTENSION OF THE USE OF ELECTRIC POWER IN COAL MINES (O Rasshirenii Oblasti Ispol'zovaniya Elektricheskoi Energii v Ugol'nykh Shakhtakh).
May 62 [9]p. 5 refs. RTS 2089.
Order from OTS or SLA $1.10 62-25455

Trans. of N[auchno]-I[ssledovatel'skii] I[nstitut po Bezopasnosti Rabot v Gornoi Promyshlennosti]. Trudy (USSR) 1960, v. 11, p. 3-9.

DESCRIPTORS: Coal, Mines, Mining engineering, Power equipment, *Electrical equipment.

Chemical Engineering

ELECTROLYTIC MANUFACTURING METHOD FOR CHLORATE FROM CHLORIDE. 23 Juli 1962, 7p. (foreign text included). 1423/47 Japan.
Order from INT $21.00

Trans. of Japanese patent 1423/47 by Kiichiro Sugino & Motoji Yamashita of 607 Hibusumacho, Meguro-ku, Tokyo, filed 10 December 1946.

DESCRIPTORS: *Chlorates, Production, *Chlorides, *Electrolysis.

MANUF. CTURING METHOD FOR AN INDICATOR INDICATING ACIDITY, ALKALINITY NEUTRALITY AND TEMPERATURE REACTIONS. 28 Sep 1962, 8p. (foreign text included). 7288/51 Japan.
Order from INT $28.50

Trans. of Japanese patent 7288/51 by Nobuo Hashimoto of 521 Ueno-Daimon-guchi, Ooita City, filed 21 May 56.

DESCRIPTORS: *Chemical reactions, *Chemical indicators, Acids, Hydrogen ion concentration, Hydroxides, Ions, Ionization, Neutralization, Temperature.

MANUFACTURING PROCESS FOR ACETYLENE CHLORIDE. 23 July 1962, 4p. (Foreign text included). 1535/43 Japan.
Order from INT $14.50

Trans. of Japanese patent 1535/43 by Tsutomu Komada of 135-7 Sakurazuka-hondoori, Toyonaka City, filed 26 December 1941.

DESCRIPTORS: Acetylenes, *Acetylene derivatives, Chlorides, Production.

MANUFACTURING PROCESS FOR CYCLOHEXYL-SULFAMINE ACID. 24 September 1962, 3p. (foreign text included). 830/54 Japan.
Order from INT $8.00

Trans. of Japanese patent 830/54 by Mitsubishi Kasei Kogyo Co. Ltd. 6-6- Ginza-nishi, Chuo-ku, Tokyo, filed 3 Dec 51.

DESCRIPTORS: *Cyclohexane derivatives, *Sulfonamides, Production.

MANUFACTURING PROCESS FOR HALOGENATED 2,2'- DIHYDROXYDIPHENYL METHANE.
29 August 1962, 10p. (foreign text included).
6179/53 Japan.
Order from INT $33.50

Trans. of Japanese patent 6179/53 by Hodogaya Kagaku Kogyo Co. Ltd., 3 Shiba-Toranomon, Minato-ku, Tokyo, filed 16 August 51.

DESCRIPTORS: *Methanes, Halogenation, Hydroxides *Phenyl radicals, Production.

MANUFACTURING PROCESS FOR SODIUM CYCLO-HEXYLSULPHAMINATE. 24 September 1962, 2p. (foreign text included). 3426/52 Japan.
Order from INT $5.00

Trans. of Japanese patent 3426/52 by Tanabe Seiyaku Co. Ltd. 3-21 Doshoo-machi, Higashi-ku, Osaka City, filed 11 Dec 50.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-17849, 27 Aug 54 [2]p.

DESCRIPTORS: Sodium compounds, *Cyclohexane derivatives, *Sulfonamides, Production

MANUFACTURING PROCESS FOR VINYL CHLORIDE FROM ACETYLENE. 23 Juli 1962, 4p. (foreign text included). 2028/43.
Order from INT $11.50

Trans. of Japanese patent 2028/43 by Hajime Ueda of Osaka City, Assignor to the Corp., Dainippon Celluloid Co. Ltd., 217 Shidoosaicho, Sakai City, filed 1 Juli 1942, publ. 30 April 1943.

DESCRIPTORS: *Vinyl chlorides, Production, *Acetylenes.

METHOD FOR MANUFACTURING BROMATE.
24 July 1962, 9p. (Foreign text included). 9864/57 Japan.
Order from INT $27.50

Trans. of Japanese patent 9864/57 by Kiichiro Sugino of Fujisawa City & Another, Assignors to the Corp., Sanwa Yun-yaku Co. Ltd. 2-2-1 Marunouchi Chiyoda-ku, Tokyo, filed 30 August 55.

DESCRIPTORS: *Bromine compounds, Acids, *Salts, Production.

METHOD FOR MANUFACTURING OF LOW-VALENCY CHEMICAL COMPOUNDS BY APPLYING A DISCHARGE PHENOMENON. 25 July 1962, 12p. (foreign tect included). 7463/54 Japan.
Order from INT $54.00

Trans. of Japanese patent 7463/54 by Shin-ichi Tokumoto, 2-24 Fujimicho, Chiyoda-ku, Tokyo, filed 9 Dec 52.

DESCRIPTORS: Chemical elements, *Chemical reactions, Valence, *Electric discharges.

PROCESS FOR THE SYNTHESIS OF HIGHER ALCOHOL FROM LOWER ALCOHOL. 25 July 1962, 7p. (foreign text included). 3809/55 Japan.
Order from INT $39.50

Trans. of Japanese patent 3809/55, by Agency of Industrial Science & Technology, Japan, filed 22 July 53.

DESCRIPTORS: *Alcohols, Synthesis.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 44. 17 Jan 63 [33]p. JPRS: 17181.
Order from OTS or SLA $3.60 63-15116

Trans. of 10 selected articles from Oct 62 issues of 10 Soviet newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Industrial plants, Construction, Chemicals, Glass textiles, Adhesives, Polymers, Lactams, Synthetic rubber, Plastics, Synthetic fibers.

Contents:
Lagging construction of the Kedainyai chemical combine by I. Petrashkyavichyus
Lagging construction of the Valmiera glass fiber plant, by A. Berg and others
Organization of chemical production at the "Kiviili" shale-chemical combine, by Ya. Ulanen
Products from synthetic materials, by M. Babayan
Lagging production of caprolactam at the Lisichansk chemical combine, by V. Fedorov
Inefficient accounting at enterprises in the city of Dokshukino
For rapid construction of synthetic rubber plants
Lagging party work at the Okhtinskii combine, by G. Chizhenkovin
Numerous new polypropylene products developed by the All-Union Scientific Research Institute of Artificial Fiber, by A. Laskina
Quality and quantity production at the Stavropol' synthetic rubber plant, by L. Kovalev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 45. 28 Jan 63 [36]p. JPRS: 17309.
Order from OTS or SLA $3.60 63-15366

Trans. of 9 selected articles from Oct 62 issues of 6 Soviet newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Fertilizers, *Synthetic rubber, Lactams, *Polyethylene plastics, Pipes, Agriculture, Paints, Tires, Industrial plants, Construction, Economics.

Contents:
Fertilizer production at the Voskresensk chemical combine, by N. Yakovchuk
Acceleration of the output of synthetic rubbers
Progress in the construction of the caprolactam shop at the Rustavi nitrogen fertilizer plant, by G. Dzamanshvili and others
Plastic water pipe line in agriculture
Chemical graduates from the no. 1 trade-and-technical school
Expansion of the riga lacquer and paint plant, by F. Volokhov
Production of tire materials in Bashkiriya, by A. Laletin
Improved production at the Krasnoyarsk synthetic rubber plant, by P. Novokshonov
Startup of the first stage of the Omsk synthetic rubber plant, by S. Shupta.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 14. 3 Jan 63 [14]p. JPRS: 16963.
Order from OTS or SLA $1.60 63-13847

Trans. of Vsesoyuznoe Nauchnoe Obshchestvo Khimikov. Informatsionnyi Byulleten' [sic] (USSR) 1962, no. 9, p. 20; Mashinostroitel' (USSR) 1962 [no. 10] p. 9; and from Ekonomicheskaya Gazeta (USSR) 1962, no. 41[62] p. 43.

DESCRIPTORS: *Industrial production, *Chemical industry, Machines, *Paper industry, *Textile industry, Antibiotics, Thermoplastics, Production, *Compressors, Manufacturing methods.

Contents:
Plans for defibrer production at Petrozavodsk plant
The cost of underrating separators
An apparatus for the production of antibiotics
TP-250 automatic thermoplast machine made in Odessa economic region
Delay of production of spinning machine PTs-100
Specialization and unification of compressor manufacturing, by A. Shatilov and A. Shapovalenko.

Aleksandrov, L. N.
THE CONTAMINATION OF TUNGSTEN BY DIFFUSION OF CARBON FROM GRAPHITE LUBRICANTS. Jan 63 [4]p. 14 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 9, p. 53-[58].

DESCRIPTORS: *Tungsten, Contamination, *Lubricants, *Graphite, *Carbon, Diffusion, Tracer studies, Chemical engineering.

Bobikov, P. I. and Gindin, L. M.
INDUSTRIAL SEPARATION OF METALS IN COLUMNS BY EXCHANGE EXTRACTION. Jan 63 [6]p. 7 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of A[kademiya] N[auk] SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 6, p. 46ff.

DESCRIPTORS: *Metals, Separation, *Towers (Chemistry) Exchange reactions, Fatty acids, Carboxylic acids, Soaps, Hydrochloric acid, *Nickel, *Cobalt, Sodium compounds, Chlorides, Chemical engineering.

Boyarchuk, P. G. and Planovskii, A. N.
THE KINETICS OF MASS TRANSFER IN RECTIFICATION APPARATUS OF THE FILM TYPE. Oct 62 [6]p. 21 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1962, no. 3 [p. 195-200].

DESCRIPTORS: *Towers (Chemistry), Rectifiers, Films, *Mass transfer, Phase studies, Dynamics, *Chemical engineering

Chebukov, M. F. and Ignat'eva, L. P.
WASTE FROM THE PRODUCTION OF HYDROFLUORIC ACID AS AN ADDITION TO CEMENT TO REGULATE THE SETTING TIME. [1962] 3p.
Order from ATS $4.00 ATS-61P66R

Trans. of Vses[oyuznoe] Khim[icheskoe] Obshchestvo. Zh[urnal] (USSR) 1960, v. 5, no. 6, p. 712-713.

DESCRIPTORS: *Cements, Additives, Wastes (Industrial), Hardening, Hydrogen compounds, Fluorides, Solutions, Water.

Chekhov, O. S. and Khiterer, R. Z.
SOME QUESTIONS OF AMMONIA SYNTHESIS IN A COLUMN WITH A FLUIDIZED CATALYTIC BED. Oct 62 [6]p. 15 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khim[icheskoe] Prom[yshlennost'] (USSR) 1962, no. 4 [p. 277-281].

DESCRIPTORS: *Ammonia, Synthesis, *Catalysts, Fluidized solids, *Chemical engineering.

Ciborowskii, J. and Wronski, S.
DESUBLIMATION STUDIES USING AN INDIRECTLY COOLED FLUIDIZED BED. Oct 62 [7]p. 9 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Chemia Stosowana (Poland) 1962 [v. 6] no. 2, p. 153-165.

DESCRIPTORS: *Fluidized solids, Cooling, Sublimation, Vapors, Condensation, *Chemical engineering.

Danilov, I. B. and Keilin, V. E.
HEAT TRANSFER AND HYDRAULIC RESISTANCE IN FLOW ALONG TUBES WITH SPIRAL FINS. Jan 63 [4]p. 5 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 9, p. 3ff.

DESCRIPTORS: *Fluid flow, Resistance, *Heat transfer, Pipes, Helixes, *Chemical engineering.

Devyatov, B. N. and Kornev, Yu. N.
THE APPLICATION OF BURMAN-LAGRANGE SERIES IN THE ANALYSIS OF TRANSITION PROCESSES IN CHEMICAL ENGINEERING EQUIPMENT. Jan 63 [9]p. 11 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of A[kademiya] N[auk] SSSR. Sibirsk[oe] Otd[elenie]. Izv[estiya] 1962, no. 5, p. 14ff.

DESCRIPTORS: *Towers (Chemistry), Heat transfer, Diffusion, Functions, *Chemical engineering.

Donat, E. V.
A METHOD OF CALCULATING THE CONCENTRATION OF SOLID PARTICLES BEING TRANSPORTED BY A GAS STREAM ALONG A HORIZONTAL PIPELINE. Oct 62 [4]p. 11 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 6, p. 55ff.

DESCRIPTORS: *Conveyors, Pipes, Particles, Transportation, Gas flow, *Pneumatic systems, *Chemical engineering.

Gel'perin, N. I. and Ainshtein, V. G.
ON THE INFLUENCE OF THE SIZE AND SPECIFIC GRAVITY OF SOLID PARTICLES ON THEIR HEAT TRANSFER COEFFICIENT TOWARD A GAS IN A FLUIDIZED BED. Oct 62 [3]p. 15 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 3, p. 6ff.

DESCRIPTORS: *Fluidized solids, *Heat transfer, Gases, Particles, Density, *Chemical engineering.

Graetz, Andre.
THE CRACKING OF PETROLEUMS [PT. 1]. [1962] 22p. 5 refs.
Available on loan from SLA 63-10466

Trans. of Chimie et Industrie (France) 1930 [v. 24] [no. 2] p. 271-279.

DESCRIPTORS: *Petroleum, Organic materials, *Hydrocarbons, *Decomposition, Pyrolysis, Pressure, Gasoline, Petroleum industry, Refineries.

Häger, C. O. E. and Svavar, F. N.
APPARATUS FOR THE ATOMIZATION AND VAPORIZATION OF LIQUIDS IN A GASEOUS MEDIUM. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-18360

Trans. of Swedish patent 82, 279, cl. 36:d:1, valid from 16 Feb 33, pub. 3 Jan 35.

DESCRIPTORS: *Atomization, *Vaporization, *Liquids, *Gases, Chemical engineering.

Ilin, D. T. and Eremin, E. N.
PYROLYSIS OF GASOLINE VAPOR TO ACETYLENE AND OLEFINS IN A HYDROGEN PLASMA. Oct 62 [2]p. 3 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Moscow U. Vestnik. [Seriya 2: Khimiya] (USSR) 1962 [v. 17] no. 2, p. 29-[30].

DESCRIPTORS: Hydrocarbons, *Gasoline, Pyrolysis, *Acetylenes, *Ethylenes, Methanes, *Plasma physics, Hydrogen, Electric arcs, *Chemical engineering.

Jiru, P., Grubner, O., and Ralek, M.
PREPARATION AND PROPERTIES OF TYPE X MOLECULAR SIEVES. Jan 63 [4]p. 16 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Chemicky Prumysl (Czechoslovakia) 1962 [v. 12(37)] no. 7, p. 355ff.

DESCRIPTORS: *Absorbents, Preparation, Physical properties, *Chemical engineering

Jiru, P. and Kubica, L.
STABILIZED VANADIUM OXIDATION CATALYSTS FOR THE PRODUCTION OF SULFURIC ACID. Oct 62 [6]p. 12 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Chemicky Prumysl (Czechoslovakia) 1962 [v. 12(37)] no. 5, p. 232ff.

DESCRIPTORS: *Sulfuric acid, Production, Oxidation, Catalysts, *Vanadium catalysts, Stabilization, Potassium compounds, Salts, Phosphoric acids, Tungstic acid, Molybdic acids, *Chemical engineering.

Kazakov, R. G.
A NEW TYPE OF AUTOMATIC SETTLING CENTRIFUGE WITH AXIAL FILTRATION. Oct 62 [3]p. 2 refs.
Order from ICE in v. 2, no. 4 $15.00/year

Trans. of Khim[icheskoe] Mashinostroenie (USSR) 1962 [v. 4] no. 3, p. 1-[3].
Another trans. is available from OTS or SLA $1.60 in 62-32209, JPRS-14713, 2 Aug 62 [19]p.

DESCRIPTORS: *Centrifuges, Design, Specifications, Tests, Separation, Filters (Fluid), Chemical engineering.

Kostrin, K. B.
WINKLER-KOCH PROCESS FOR CRACKING MAZOUT. [1962] [26]p.
Available on loan from SLA 63-10341

Trans. of Neftyanoe Khozyaistvo (USSR) 1929, v. 17, p. 520-530.

DESCRIPTORS: *Petroleum, *Refineries, Design, Towers (Chemistry), Furnaces, Evaporators.

Kostrin, K.
WINKLER-KOCH CRACKING UNITS FOR PROCESSING GAS OILS. [1962] [13]p. 12 refs.
Available on loan from SLA 63-10340

Trans. of Azerb[aidzhanskoe] Neft[yanoe] Khoz[yaistvo] (USSR) 1930, v. 10, no. 2, p. 72-77.

DESCRIPTORS: *Petroleum, *Refineries, Design, Operation, Gases, Oils.

Kotulski, B. and Sachajdak, J.
STUDIES ON THE EFFICIENCY OF SPRAY-CLEANING OF EFFLUENTS FROM CHEMICAL PLANTS. Oct 62[3]p. 10 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Przemysl Chemiczny (Poland) 1962 [v. 18(41)] no. 2, p. 95ff.

DESCRIPTORS: *Industrial plants, Cleaning, Sprays, *Chemical waste, *Chemical engineering.

Kowalczyk, J. and Pompowski, T.
STUDIES ON THE POSSIBILITY OF USING MAGNETOHYDRODYNAMIC PROCESSES FOR MIXING OF ELECTROLYTES. Oct 62 [7]p. 11 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Chemia Stosowana (Poland) 1962 [v. 6] no. 2, p. 279ff.

DESCRIPTORS: *Magnetohydrodynamics, Electrodes, *Electrolytes, Mixtures, Production, Chemical engineering.

Kyazimov, A. A., Fedotova, A. F., and Stepanyan, E. G.
PLANT TEST OF ROTATING-DISK CONTACTOR. Jan 63 [3]p.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 5, p. 10[-13].
Another trans. is available from ATS $6.75 as ATS-56P63R [1962] 5p.

DESCRIPTORS: *Refineries, Disks, Rotation, Design, *Oils, *Furfural alcohols, *Chemical engineering.

Manshilin, V. V., Manakov, N. Kh. and others.
ENGINEERING DEVELOPMENT OF A NEW FLUIDIZED CATALYTIC CRACKING SYSTEM. Oct 62 [7]p.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 6, p. 41ff.

DESCRIPTORS: *Coke, Decomposition, Towers (Chemistry), *Catalysts, *Alumina-silica catalysts, Fluidized solids, *Chemical engineering.

Marsal, D[ietrich].
COMPUTATION OF [WATER FLOODING OF] PETROLEUM RESERVOIRS IN UNDIMENSIONAL APPROXIMATION. I. FUNDAMENTALS [Die Berechnung der Verwässerung von Erdöllagerstätten in Eindimensionaler Näherung. 1. Tiel: Grundlagen]. [1962] [19]p. 2 refs.
Order from SLA $1.60 62-16646

Trans. of Erdöl und Kohle (West Germany) 1957, v. 10, no. 2, p. 61-65.

DESCRIPTORS: *Petroleum, Sources, *Hydraulic reservoirs, Hydraulic accumulators, Permeability, Water injection, Hydrology, Mathematical analysis, Geophysical prospecting.

Marsal, Dietrich.
COMPUTATION OF WATER FLOODING OF PETROLEUM RESERVOIRS IN UNIDIMENSIONAL APPROXIMATION. II. THE TRANSFER OF LABORATORY DERIVED RELATIONSHIPS TO THE FIELD (Die Berechnung der Verwässerung von Erdöllagerstätten in Eindimensionaler Näherung. 2. Tiel: Die Übertragung der im Laboratorium Gewonnenen Beziehungen auf das Feld). [1962] [26]p. (foreign text included) 1 ref.
Order from SLA $2.60 62-16647

Trans. of Erdöl und Kohle (West Germany) 1957, v. 10, no. 3, p. 141-146.

DESCRIPTORS: *Petroleum, Sources, *Hydraulic reservoirs, Hydraulic accumulators, Permeability, Water injection, Hydrology, Mathematical analysis, Geophysical prospecting.

Metz, L. and Rödig, A.
CAUSE AND COURSE OF SPONTANEOUS DECOMPOSITION OF TRICHLORETHYLENE BY ALUMINIUM. 4 Oct 50, 6p. (table omitted) 12 refs.
Order from SLA $1.10 62-18424

Trans. of Chemie-Ingenieur-Technik (West Germany) 1949 [v. 21] May, p. 191-193.

DESCRIPTORS: *Vinyl chlorides, *Aluminium, *Chemical reactions, Aluminium alloys, Cleaning fluids, Explosive forming, *Inhibition, Decomposition.

The $AlCl_3$ developed first of all catalyzes the trichlorethylene condensation. The heat liberated produces total de-chlorination of the condensation product and complete oxidation of the aluminium shavings. The use of non-hazardous tetrachlorethylene in the future is suggested. (Author)

Nemec, J.
INFLUENCE OF PRESSURE DROP ON THE CAPACITY OF VACUUM DISTILLATION COLUMNS. Oct 62 [4]p. 2 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Chemicky Prumysl (Czechoslovakia) 1962 [v. 12 (37)] No. 4, p. 186ff.

DESCRIPTORS: *Towers (Chemistry), *Distilling plants, *Vacuum apparatus, Pressure, Temperature, *Chemical engineering.

Nemeth, J.
APPLICATION OF THE THEORY OF SIMILARITY TO THE STUDY OF THE KINETICS OF VAPOR ADSORPTION. Jan 63 [6]p. 8 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Magyar Tudomanyos Akademia [Kemiai Tudomanyok Osztalyanak] Kozlemenyei (Hungary) [1962, v. 18] no. 1, p. 23-[36].

DESCRIPTORS: *Vapor, *Adsorbents, Adsorption, Theory, Dynamics, *Chemical engineering.

Piottukh, Yu. N. and Shabanov, S. I.
HEAT EXCHANGE IN THREE-COMPONENT FLOW. Oct 62 [5]p. 17 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Akad[emiya] Nauk SSSR. Sibirskoe Otdel[enie]. Izvest[iya] 1961, no. 11, p. 40ff.

DESCRIPTORS: *Fluidized solids, *Heat transfer, Mass transfer, Fluid flow, Carbon, Coke, *Chemical engineering.

Pis'men, L. M. and Ioffe, I. I.
CALCULATION OF OPTIMAL PROCESSES IN CHEMICAL REACTORS BY THE METHOD OF DYNAMIC PROGRAMMING. Oct 62 [9]p. 14 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 4 [p. 260-266].
Another trans. is available from ATS $19.25 as ATS-45P63R [1962] 14p.

DESCRIPTORS: *Towers (Chemistry), Reactors, *Programming, *Computers, Chemical reactions, *Chemical engineering.

Pis'men, L. M. and Ioffe, I. I.
CALCULATION OF THE OPTIMAL PROCESS IN CHEMICAL REACTORS BY THE METHOD OF DYNAMIC PROGRAMMING. Jan 63 [9]p. 6 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1962, no. 5 [p. 352-359].
Another trans. is available from ATS $19.00 as ATS-32P65R [1962] 16p.

DESCRIPTORS: *Towers (Chemistry), Reactors, *Programming, Dynamics, *Chemical engineering.

Planovskii, A. N. and Bulatov, S. N.
ANALYTICAL CALCULATION OF THE NUMBER OF EFFECTIVE PLATES OF COLUMNAR MASS TRANSFER EQUIPMENT. Jan 63 [6]p. 4 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 8, p. 592-[595].

DESCRIPTORS: *Towers (Chemistry), Absorption, *Mass transfer, Mathematical analysis, *Chemical engineering.

Planovskii, A. N., Bulatov, S. N., and Vertuzaev, E. D.
CALCULATION OF COLUMN EXTRACTORS WITH SIEVE PLATES. Jan 63 [5]p. 3 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1962, no. 5 [p. 364-367].

DESCRIPTORS: *Towers (Chemistry), Design, Mathematical analysis, *Chemical engineering.

Ponikarov, I. I., Nikolaev, A. M., and Zhavoronkov, N. M.
A COMPARATIVE EVALUATION OF SEVERAL TYPES OF EXTRACTION EQUIPMENT. Oct 62 [4]p. 6 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khim[icheskoe] Mashinostroenie (USSR) 1962 [v. 4] no. 3, p. 11ff.

DESCRIPTORS: *Towers (Chemistry), Heat transfer, Mass transfer, Ethanols, Alcohols, Hydrocarbons, Ethylenes, Separation, *Chemical engineering.

Popov, R. I. and others
SCHMELZEN VON SCHWEFEL IN KONTINUIERLICHEN VERFAHREN (Melting of Sulfur in Continous Procedures). 4p. (text in German).
Order from TIB $1.10

Trans. of #Koks i Khimiya (USSR) 1961, no. 3, p. 46-48.

DESCRIPTORS: *Melting, *Sulfur.

Przheslavskii, V. L.
UNTERSUCHUNG DES AUFBEREITUNGSPROZESSES VERSCHIEDENER MATERIALIEN IN DER WIRBELSCHICHT (Dressing of Different Materials in the Fluidizing Bed). 4p. (text in German).
Order from TIB $1.10

Trans. of Gornyi Zhurnal (USSR) 1961, no. 6, p. 65-66

DESCRIPTORS: *Flotation, Fluidized solids.

Razumov, I. M.
CALCULATING PNEUMATIC TRANSPORT OF SOLID CATALYSTS. Oct 62 [5]p. 12 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 4, p. 41ff.

DESCRIPTORS: *Catalysts, Transportation, *Conveyors *Pneumatic systems, Mathematical analysis, *Chemical engineering.

Razumov, I. M. and Larionova, L. I.
CALCULATION OF THE ENTRAINMENT OF FINELY GRANULAR MATERIAL FROM REACTORS WITH FLUIDIZED CATALYST BEDS. 20 Aug 62 [9]p. 4 refs.
Order from OTS or SLA $1.10 62-18967

Trans. of Khimicheskoe Mashinostroenie (USSR) 1959 [v. 1] no. 4, p. 19-21.

DESCRIPTORS: *Fluidized solids, *Gas flow, Catalysts Materials, *Grains (Metallurgy).

Sazhin, B. S.
THE BASIC FACTORS GOVERNING THE DRYING OF PASTE -LIKE MATERIALS UNDER THE CONDITIONS PREVAILING IN ROTARY RIBBON DRYERS. Oct 62 [6]p. 12 refs.
Order from ICE in v. 2, no. 4 $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 6, p. 13-20.

DESCRIPTORS: *Dryers, Design, Materials, Mass transfer, Stresses, Viscosity, *Chemical engineering.

Sebestyen, Z.
THE PRODUCTION OF ACETYLENE IN A SURFACE BURNER. Jan 63 [4]p. 3 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Magyar Asvanyolaj es Foldgaz Kiserleti Intezet Koslemenyei (Hungary) 1962, v. 3, p. 210ff.

DESCRIPTORS: *Acetylenes, Production, Methanes, Oxidation, Heaters, *Chemical engineering.

Smol'skii, B. M. and El'perin, I. T.
THE EFFECTS OF SURFACE PHENOMENA ON TRANSFER PROCESSES IN HETEROGENEOUS SYSTEMS (A REVIEW). Jan 63 [14]p. 30 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 7, p. 99-[112].

DESCRIPTORS: *Fluid flow, *Heat transfer, *Mass transfer, Boundary layer, Surface properties, *Chemical engineering.

Svajgl, O.
DECOMPOSITION OF VOLATILE COMPOUNDS OF ARSENIC ON NICKEL CATALYSTS DURING TAR DISTILLATION. Jan 63 [7]p. 14 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Chemicky Prumysl (Czechoslovakia) 1962 [v. 12(37)] no. 9, p. 473ff.

DESCRIPTORS: *Tars, Distillation, *Nickel catalysts, *Arsenic compounds, Decomposition, *Chemical engineering.

Wilke, W.
THE STATUS AND THE OBJECT OF THE LIQUIFICATION OF COAL. 24 Dec 30 [29]p.
Available on loan from SLA 63-10438

Trans. of Brennstoff- und Wärmewirtschaft (Germany) 1929 [v. 12] Nov, p. 427-435.

DESCRIPTORS: *Coal, Coal gas, *Fuel oil, Lubricants, *Benzine, Synthesis, Decomposition, Distillation, Hydrogenation, Hydrocarbons, Organic materials, *Petroleum, Petroleum industry.

Yur'ev, Yu. K. and Musaev, I. A.
CRACKING OF KEROSENE AND GAS OIL FROM PERM CRUDE WITH ALUMINUM CHLORIDE. [1962] 7p. 18 refs.
Order from OTS or SLA $1.10 62-18623

Trans. of Neftyanoe Khozyaistvo (USSR) 1963 [v. 17] no. 2, p. 56-59.

DESCRIPTORS: *Petroleum, *Oils, *Kerosene, *Fractionation, Aluminum compounds, Chlorides.

Zhevnovatyi, A. N.
THE INFLUENCE OF THE BASIC PARAMETERS OF HYDROCYCLONE -THICKENERS ON THEIR OPERATING EFFICIENCY. Oct 62 [5]p. 7 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Khim[icheskoe] Mashinostroenie (USSR) 1962 [v. 4] no. 2, p. 13-17.

DESCRIPTORS: *Centrifuges, Cyclones, Separation, Aluminum compounds, Hydroxides, *Chemical engineering.

Civil Engineering

[CONCRETE AND REINFORCED CONCRETE] 1961, NO. 2: [SELECTED ARTICLES] tr. by G. L. Cairns. Jan 62 [28]p. 6 refs. DSIR Library Communication 1095; NLL M.8812.
Order from OTS or SLA $2.60 62-32807

Trans. of Beton i Zhelezobeton (USSR) 1961, no. 2, p. 68-83.

DESCRIPTORS: *Concrete, *Reinforced concrete, Panels (Structural), Wastes (Industrial), Construction materials industry, *Housing, *Construction, Stresses, Failure (Mechanics), Pearlite, Climatic factors, Structures, Reinforcing materials.

Contents:
Large panels of autoclaved aerated concrete without cement containing blast furnace slag and fuel ash, by L. M. Rozenfel'd and others
Use of fuel ash concrete in the Latvian SSR, by G. Ya. Kunnos and others
Problems of the strength of lightweight concrete, by Yu. E. Kornilovich
Perlite concrete for large-panelled structures, by M. T. Sedakova

[CONCRETE AND REINFORCED CONCRETE] 1961 no. 2 [SELECTED ARTICLES] tr. by G. L. Cairns. Jan 62 [21]p. DSIR Library Communication 1094; NLL M.8813.
Order from OTS or SLA $2.60 62-32808

Trans. of Beton i Zhelezobeton (USSR) 1961, no. 2, p. 51-63.

DESCRIPTORS: *Concrete, *Reinforced concrete, Industrial production, Clay minerals, Reinforcing materials, Structures, Roofs, Panels (Structural), Load distribution, *Housing, Construction.

Contents:
The development of the production of lightweight concretes, by S. A. Mironov
Prestressed keramzite (expanded clay aggregate) concrete slabs for factory roofs, by V. V. Mikhailov
Large panels made of keramzite (expanded clay aggregate) concrete for the construction of flats, by G. F. Kuznetsov and N. Ya. Spivak.

Electrical and Electronic Engineering

APPEARANCE OF EPOCH-MAKING VTR (VIDEO TAPE RECORDER): IT WORKS WITH ONE HEAD - TEST PRODUCT NO. 1 MADE PUBLIC BY TO SHIBA (TOKYO SHIBAURA ELECTRIC CO. LTD.). [1962] 5p. (figs. omitted).
Order from SLA $1.10 62-16729

Trans. from Nikkan Kogyo Shimbun (Japan) 1959, 15 Sep.

DESCRIPTORS: *Video signals, Recording systems, *Magnetic recording systems, Television equipment, Japan.

CONDENSER WITH METAL COATING SO THIN THAT, UPON BREAKDOWN, IT BURNS AWAY AT, OR IN THE VICINITY OF, THE BREAKDOWN. 24 Mar 41, 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-18471

Trans. of German patent 714, 365, 27 Nov 41, granted 6 Nov 41, pat. from 21 Jan 37.

DESCRIPTORS: *Capacitors, *Metal coatings, *Thin films, Electrical equipment.

CONDENSER WITH METAL COATINGS WHICH ARE APPLIED TO AN INTERMEDIATE INSULATING LAYER. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18551

Trans. of French patent 790,193, gr. 12, cl. 6, appl. 17 May 35, issued 2 Sep 35, pub. 15 Nov 35 applications [deposited] in Germany 8 June and 27 Oct 34, by Robert Bosch AG., Germany).

DESCRIPTORS: *Capacitors, Metal coatings, Electric insulation.

METHOD FOR TREATING OF A COLLECTOR SPRINC WITH HEAT BY CHARGING DIRECT ELECTRIFICATION. 13 August 1962, 5p. (foreign text included). 2152/56 Japan.
Order from INT $20.00

Trans. of Japanese patent 2152/56 by Kooshuuha Netsuren Co. Ltd. 5-493 Kita-Shinagawa, Shinagawa-ku, Tokyo, filed 31 July 53.

DESCRIPTORS: *Electric motors, *Springs, Heat treatment, Electric currents.

RADIO AND TELEVISION, 1959, VOL. 8, NO. 23, P. 747: REVIEW[S]. 15 June 60 [7]p. USASIA: SC-130c/60; JPRS: R-764-D.
Order from OTS or SLA $1.10 60-31265

DESCRIPTORS: *Communication systems, Radio, Television, Production, *Television stations, Television equipment.

Contents:
Small television centers in the Soviet Union, by P. E. Kodess (Tekhnika Kino i Televideniya (USSR) 1959 [v. 3] no. 1, p. 17-18)
New television production centers in Baden-Baden, by V. Braunmühl and Eber (Südwestfunk Technische Blätter [sic] 1959, no. 2, p. 2-7).
A contribution to television studio planning, by G. Stumpf and U. Stepputat (Rundfunktechnische Mitteilungen (West Germany) 1959 [v. 3] no. 2, p. 91-93).

SPINDLE TYPE REINFORCED PORCELAIN INSULATORS FOR EXTERNAL INSTALLATIONS OF 3 TO 220 kV. [1962] 7p. [DSIR] NLL M. 3318.
Order from OTS or SLA $1.10 62-24662

Trans. of [Russian State] Standard GOST 8608-57, gr. E 35, introduced 7 Jan 58.

DESCRIPTORS: Electrical equipment, *Electric insulation, Ceramic materials, Standards, Specifications, Tests.

This standard is applicable to supporting, pin-type porcelain insulators for insulation and strengthening of current conducting parts of electrical apparatus, used in outdoor installations of 3 to 220 kV, A. C. 50 Hz. (Author)

Bernegger, J.
MEASURING DEVICES USED IN TELEGRAPHY. 15 Aug 53, 6p. (figs. omitted).
Order from SLA $1.10 62-18493

Trans. from Fernmelde-Praxis (West Germany) 1952, v. 29, no. 14.

DESCRIPTORS: *Telegraph systems, Measuring devices (Electrical and electronic).

Borisov, G. S.
THE "IGIA" TV TRANSMITTING STATION. 15 Aug 61 [4]p. USASIA Trans. Log no. 1211.
Order from OTS or SLA $1.10 62-32607

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 11, p. 74-75.

DESCRIPTORS: Television stations, *Television transmitters, Remote control systems, Electronic equipment, Vidio signals, Radio signals.

Chilikin, V. S.
MILLIMICROSECOND PULSE GENERATOR MPG - 23. 28 June 61 [9]p. 6 refs. USASIA Trans. Log no. 1187.
Order from OTS or SLA $1.10] 62-32657

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 1, p. 40-45.

DESCRIPTORS: *Laboratory equipment, Measuring devices (Electrical and electronic), *Pulse generators, Oscillator circuits, Design, Circuits.

A portable laboratory equipment forming pulses of millimicrosecond duration in a wide range of repetition frequency (up to 1.5 mc) is described. The equipment is used for various pulse measurements. (Author)

Drahny, M. and Konecny, I.
UNTERSUCHUNG DER VERHÄLTNISSE IM STROMKREIS DER BATTERIEZUENDUNG (Examination of the Conditions in the Electric Circuit of the Battery Ignition). (text in German).
Order from TIB $1.10

Trans. from Elektrotechnicky Obzor (Czechoslovakia) 1959, v. 48, no. 11.

DESCRIPTORS: *Circuits, *Ignition.

Dvorkin, S. A.
DETERMINATION OF THE TRANSMISSION LEVEL IN HF TELEPHONE SYSTEM OPERATING ON PRESELECTION. 15 Aug 61 [13]p. 8 refs. USASIA Trans. Log no. 1204.
Order from OTS or SLA $1.60 62-32600

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 10, p. 62-69.

DESCRIPTORS: *Multiplex transmission, *Telephone communication systems, High frequency, *Wave transmission, Amplifiers, Radio repeaters, Power, Loading, Equations.

Equations for the calculation of the transmission level for the operation of high-frequency telephone systems with any value of pre-selection, where the level varies according to linear relationships, are derived. Analysis of systems K-24 and K-60 is given. Examples for the use of equations derived for the calculation of the average power of systems operating on preselection and for the calculation of the loading of the line repeaters under varying operating conditions are included. (Author)

Egorychev, B. A.
FREQUENCY STEERING OF THE BEAM IN ANTENNA ARRAYS. 22 Jan 63 [13]p. JPRS: 17225.
Order from OTS or SLA $1.60 63-15402

Trans. of Fiziko-Tekhnicheskii Institut, Moscow. Trudy (USSR) 1962, v. 8, p. 67-72.

DESCRIPTORS: *Antennas, *Antenna radiation patterns, Frequency.

The short theory of frequency steering presented here indicates in principle the possibility of building antennas with linear and two-dimensional steering of the radiation pattern. The formulas derived make it possible to do design calculations of the parameters of linear and two-dimensional arrays for a given steering sector, the number of lines, the width of the pattern and the frequency deviation. In actual use of antennas with frequency scanning it is also necessary to consider the design of delaying structures and losses in them. (Author)

Hottinger, M.
ELECTRICAL SPACE HEATING. 27 May 47, 10p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18395

Trans. of Assoc[iation] Suisse des Electriciens. Bull[etin] 1946 [v. 37] no. 11, p. 291-298.

DESCRIPTORS: Heating plants, *Heaters, *Electricity, Heat transfer.

Iordanishvili, E. K. and Stil'bans, L. S.
THERMOELEKTRISCHE KLEINSTKUEHLSCHRÄNKE (Thermoelectric Microcoolers). (text in German).
Order from TIB $3.20

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1956, v. 26 [no. 5] p. 945-957.
Other translations are available in English from LC or SLA mi$2.40, ph$3.30 as 60-17681, LC-916, Oct 59 [14]p. and from OTS or ETC $1.85 as 61-17484, MTWL-1020, 20p.

DESCRIPTORS: *Thermoelectricity, *Cooling, Refrigeration system.

Kalinin, V. N. and Makar'ev, B. M.
AN INVESTIGATION OF THE FREE OSCILLATIONS IN NONLINEAR AUTOMATIC CONTROL SYSTEMS BY MEANS OF LOGARITHMIC FREQUENCY CHARACTERISTICS (Issledovanie Svobodnykh Kolebanii v Nelineinykh Sistemakh Avtomaticheskogo Regulirovaniya s Pomoshchyu Logarifmicheskikh Chastotnykh Kharakteristik). May 62 [11]p. 2 refs. RTS 2066.
Order from OTS or SLA $1.60 62-25454

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Energ[etika] i Avtom[atika] 1960, no. 6, p. 157-161.

DESCRIPTORS: Automatic, *Control systems, *Linear systems, Oscillation, Nonlinear systems, Frequency, Stability, Functions.

Kamenskii, N. N.
R-600 RADIO-RELAY SYSTEM. 15 Aug 61 [16]p. USASIA Trans. Log no. 1203.
Order from OTS or SLA $1.60 62-32599

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 10, p. 53-61.
Another trans. is available from OTS $0.50 as 61-21469, JPRS-6998, 29 Mar, 14p.

DESCRIPTORS: *Radio relay systems, *Multiplex transmission, Telephone communication systems, *Television communication systems, High frequency, Electronic equipment, Waveguides, Transmission lines, Maintenance.

For abstract see Technical Translations 5: 621, 1961.

Kapranov, M. V.
LOCKING BAND FOR AUTOMATIC PHASE-FREQUENCY CONTROL. [1962] 32p. 6 refs.
Order from OTS or SLA $3.60 62-14438

Trans. of Radiotekhnika (USSR) 1956, v. 11, no. 12, p. 37-52.

DESCRIPTORS: Automatic, *Frequency, Control, *Control systems, Phase detectors, *Phase control devices, Synthesis.

The performance of an automatic phase-frequency control system with two filter circuits after a phase detector and resonance circuits in the high frequency channel is investigated. The response characteristic of the phase detector is approximated with a polygon, i.e. segments of straight lines, for the purpose of determining the locking band analytically. Equations which relate the locking band with the filter parameters and the time delay in the circuits are derived. (Author)

Kasatkin, L. V. and Posen, N. L.
AN AUTOMATIC LINE FOR MEASUREMENT OF THE REFLECTION FACTOR IN A K-BAND (Avtomaticheskaya Liniya slya Izmereniya Koeffitsienta Otrazheniya v Diapozone Santimetrovykh Voln) tr. by Zanis Stuberovskis. Jan 62 [7]p. 2 refs. E-T-R-61-18; AD-276 704.
Order from OTS or SLA $1.10 62-32106

Trans. of #Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1961, v. 4, no. 3, p. 354-356.

DESCRIPTORS: *Standing wave indicators, *Microwave probes, *Test sets, Oscilloscopes, K band, Measurement, Automatic, Instrumentation, Impedance matching, Transmission lines, Waveguides, Design.

A description is given of an automatic measuring instrument to determine, with an accuracy of + or − 10% the frequency responses of mismatching in the interval of frequencies from 20%. In the process of carrying out band measurements, there is no need for tuning any elements of the high-frequency system instrument. The pattern of the standing wave in the waveguide is indicated on the oscilloscope of the instrument. Automatic measurements of the reflection factor considerably relieve the process of matching different waveguide couplings. While the requirements for the accuracy of measurement of K-band factor are not great, the simplicity of measurement and the rate of analysis of the frequency dependencies of the reflection factor on the waveguide coupling under examination are important. (Author)

Kaznacheev, Yu. I.
WAVEGUIDE LINE ELEMENTS AND EQUIPMENT. 15 Aug 61 [12]p. 12 refs. USASIA Trans. Log no. 1208.
Order from OTS or SLA $1.60 62-32604

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 11, p. 48-53.

DESCRIPTORS: *Waveguides, *Transmission lines, Design, Manufacturing methods, Waveguide bends, Waveguide filters, Amplitude modulation, Frequency modulation.

Findings are set forth of investigations on the manufacture of waveguide elements and waveguide line equipment and also on the selection of modulation methods and terminal apparatus. (Author)

Kaznacheev, Yu. I.
WAVEGUIDES WITH LOW LOSSES. 15 Aug 61 [11]p. 15 refs. USASIA Trans. Log no. 1202.
Order from OTS or SLA $1.60 62-32597

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 10, p. 47-52.

DESCRIPTORS: *Wave transmission, *Waveguides, Design, Attenuation, Dielectrics.

Kharkevich, A. A.
TO THE THEORY OF THE PERFECT RECEIVER. [1961] 10p. MDF K-113.
Order from OTS or SLA $1.10 62-23166

Trans. of Elektrosvyaz' (USSR) 1956, v 10, no. 4, p. 28-34.
Another trans. is available from LC or SLA mi$6.00, ph$18.30 in 59-12389, F-TS-10013/V [1958] 116p.

DESCRIPTORS: *Radio receivers, *Radio signals, *Noise (Radio), Signal-to-noise ratio, Mathematical analysis.

The noise-stability is analyzed of a receiver for which the operation is described by two different definitions. It is shown that any kind of receiver gives better results depending on the noise probability distribution. (Author)

Krol', Ts. I., Knorring, G. M., and Efimkina, V. F.
THE LIGHTING OF WINDOWLESS BUILDINGS; LIGHTING OF WINDOWLESS BUILDINGS IN DESIGNS OF THE GPI "HEAVY INDUSTRY ELECTRICITY PROJECT"; CONFERENCE ON THE ARTIFICIAL LIGHTING OF WINDOWLESS BUILDINGS (K Voprosu ob Osveshchenii Pomeshchenii bez Estestvennogo Sveta Osveshchenie Bezokonnykh Zdanii v Proektakh LO GPI "Tyazhpromelektroproekt"; Soveshchanie po Iskusstvennomu Osveshcheniyu Besfonarnykh i Bezokonnykh Zdanii) tr. by G. L. Cairns. Sep 61 [10]p. DSIR Library Communication 1097; NLL M.8810.
Order from OTS or SLA $1.10 62-32795

Trans. of Svetotekhnika (USSR) 1960, v. 6, no. 3, p. 22-25; no. 8, p. 26-28, 30.

DESCRIPTORS: Buildings, *Lighting equipment, Illumination, Electrical industry, Conferences.

Kuzovkov, N. T.
METHOD OF INVESTIGATING AUTOMATIC CONTROL SYSTEMS CONTAINING LINEAR ELEMENTS WITH VARIABLE PARAMETERS, tr. by M. McCarthy. 1962 [19]p. 7 refs. DEG Inf. Ser. 262(CA).
Order from OTS or SLA $1.60 62-25403

Trans. of Moscow U. Vestnik. Ser[iya] Matemat[iki] Mekh[aniki, Astronomii] Fiz[iki] Khim[ii] (USSR) 1958 [v. 13] no. 6, p. 105-109.

DESCRIPTORS: Automatic, *Control systems, Mathematical analysis, Functions, Differential equations, Integral transforms.

Lundqvist, D. and others.
TRANSISTORS: REVIVED CRYSTAL DETECTORS. 10 May 52, 19p. (figs. refs. omitted).
Order from SLA $1.60 62-18496

Trans. of Teknisk Tidskrift (Sweden) 1951 [v. 81] 1 Sep, p. 657-667.

DESCRIPTORS: *Transistors, *Crystal detectors, Semiconductors, Electronics.

Mironov, S. P.
ON THE DESIGN OF PULSE TRANSFORMERS USING RING FERRITE CORES. 15 Aug 61 [14]p. 4 refs. USASIA Trans. Log no. 1207.
Order from OTS or SLA $1.60 62-32603

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 11, p. 26-33.

DESCRIPTORS: *Transformers, *Pulse transformers, Design, *Ferrite cores, Rings, Volume, Electric wire.

A method is given for designing pulse transformers of low power in ring ferrite cores, making it possible to determine well-defined core dimensions with the least consumption of magnet wire. Losses in the core are not taken into account. A design model is given. (Author)

Musatov, T. P. and Soroka, I. F.
UMBAU VON BLINDLEISTUNGSMASCHINEN FUER REAKTORBETRIEB (Construction of Compensators for Reactor Service). (text in German).
Order from TIB $0.70

Trans. of Elektricheskie Stantsii (USSR) 1961, [v. 32, no. 1] p. 86-87.

DESCRIPTORS: *Motors, *Reactors.

Nekrasov, and Sonin,
DAS EXPERIMENT DER ENERGIEUEBERTRAGUNG DURCH GLEICHSTROM VON HOHER SPANNUNG (The Experiment of Power Transmission by High Voltage Direct Current). 14p. (text in German).
Order from TIB $2.35

Trans. of Elektricheskie Stantsii (USSR) 1955, [v. 26] no. 7, p. 26-32.

DESCRIPTORS: *Power, *Transmission, *Direct Current.

Pavlov, A. A. and Poputsillo, V. P.
THE CALCULATION OF THE SIMPLEST OPTIMUM RELAY SYSTEMS OF THE SECOND ORDER. 20 Sep 62 [31]p. 23 refs. FTD-TT-62-877; AD-287 723.
Order from OTS or SLA $3.60 63-13206

Unedited rough draft trans. of Avtomaticheskoe Upravlenie i Vychislitel'naya Tekhnika (USSR) 1960, v. 3, p. 419-444.

DESCRIPTORS: Automatic, *Control systems, *Feedback, *Differential equations, *Relays.

A method of calculating one class of optimum relay systems of the second order in the presence of command inputs and disturbances has been given. For each system we obtained expressions for the optimum control law, as well as formulas for determining the optimum control time and the maximum dynamic deviation. According to these formulas we can choose the parameters of an optimum automatic control system on the basis of the requirements that the quality of the transient process must satisfy. These same formulas enable us to estimate to what extent the processes in a nonoptimum automatic control system of similar structure differ from optimum transient processes. (Author)

Pokras, A. M.
PROTECTIVE EFFECT OF A PERISCOPIC ANTENNA SYSTEM. 15 Aug 61 [11]p. 5 refs. USASIA Trans. Log no. 1201.
Order from OTS or SLA $1.60 62-32598

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 10, p. 21-26.

DESCRIPTORS: *Radio relay systems, *Microwave equipment, *Antennas, *Radio interference, Inhibition, Antenna radiation patterns, Antenna masts.

Factors determining the protective effect of a periscopic antenna were analyzed and the calculated data were compared with the experimental results. Suggestions are made concerning an increase in the protective effect. (Author)

Raukas, E. E.
ZUR VERWENDUNG VON VARISTOREN IN FUNKEN-LÖSCHSCHALTUNGEN (The Use of Varistors in Spark Extinguishing Switching). 8p. (text in German).
Order from TIB $1.55

Trans. of #Elektrosvyaz (USSR) [1961] v. 15, no. 1 [p. 66-71].

DESCRIPTORS: *Spark plugs, Switches.

Schilling, W.
BASIC THEORY OF THE MAGNETIC AMPLIFIER. II. SATURATION ANGLE CONTROL. [1962] 11p. (figs. formulae refs. omitted).
Order from SLA $1.60 62-18602

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik (West Germany) 1951, v. 72 [no. 15] p. 465-469.

DESCRIPTORS: *Magnetic amplifiers, Magnetic materials, Circuits, Rectifiers, Control systems,

Shvartsman, V. O.
ELECTROMAGNETIC COUPLING BETWEEN TWISTED CIRCUITS IN HIGH-FREQUENCY CABLES OF SYMMETRICAL CONSTRUCTION. 4 Aug 61 [14]p. 6 refs. USASIA Trans. Log no. 1198.
Order from OTS or SLA $1.60 62-32655

Trans. of Elektrosvyaz' (USSR) 1960 [v. 14] no. 8, p. 65-73.

DESCRIPTORS: High frequency, *Transmission lines, Circuits, Couplings, Electromagnetic properties, *Coupling circuits, Electric cables, Differential equations, Series, Functions, *Radiofrequency cables.

Equations are derived for the electromagnetic coupling between the principal circuits in high frequency cables with spiral quadding of the conductors. The equations make it possible to calculate the systematic component of the direct interaction between the circuits as a function of the dimensions of the structural elements of the cable and the pitch. The coefficient of coupling between the circuits in cables of types MKS-4 x 4 and 7 x 4 is calculated. (Author)

Shvartsman, V. O.
SELECTION OF THE TWIST SPACING FOR HF COMMUNICATION CABLE CIRCUITS. 15 Aug 61 [14]p. 5 refs. USASIA Trans. Log no. 1209.
Order from OTS or SLA $1.60 62-32605

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 11, p. 54-61.

DESCRIPTORS: *Communication systems, High frequency, Circuits, *Cables, Design, Couplings, Electric terminals, Mathematical analysis.

A method is developed for the selection of rational twist spacing of circuits on the basis of investigations of the direct effect on the near and distant terminals of the high frequency cables between the circuits. The significance of systematic and chance components of the direct effect is demonstrated. The method of choosing the twist spacing is illustrated in the example of a cable with a capacity of 7 quads. (Author)

Terent'ev, B. P. and Shakhgil'dyan, V. V.
ACHIEVEMENT OF HIGHLY-STABLE VARIABLE FREQUENCY BY MEANS OF PHASE SELF-TUNING. 15 Aug 61 [12]p. 6 refs. USASIA Trans. Log no. 1205.
Order from OTS or SLA $1.60 62-32601

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 11, p. 15-20.

DESCRIPTORS: *Oscillators, *Tuning circuits, Circuits, Stability, Synchronization (Electronics).

A phase self-tuning circuit is described which makes it possible to achieve a change of the frequency of stable oscillators in any section of the frequency range. Experimental findings are given. (Author)

Watson, Richard Albert.
GENERATOR OF A FLOW OF HOT GASES AND ITS APPLICATIONS, tr. by J. R-P. 26 July 62, 10p. (4 figs. omitted).
Order from OTS or SLA $1.10 62-32227

Trans. of French patent 1,191,114, gr. 7, cl. 2, internat. cl. F 23p. -- E01h, appl. filed 5 Feb 58, granted 6 Apr 59, pub. 16 Oct 59.

DESCRIPTORS: Transmission lines, Electric cables, *De-icing systems, Gas flow, Temperature, *Gas generator engines, Heat engines, Airplane engines, Design.

The use is proposed of thermal reaction engines such as turbojets or pulsejets as generators of a flow of gas at high temperature, said flow constituting special industrial means enabling the attainment of all functions without having reaction propulsion as its principal object.

Mechanical Engineering

Aleksandrov, A. E.
INVESTIGATION OF THERMAL CONDITIONS AND ELIMINATION OF OVERHEATING IN A HYDROGENERATOR STEP BEARING (Issledovanie Teplovo Rezhima i Ustranenie Peregreva Podpyatnika Gidrogeneratora) tr. by V. Burdon. 11 Aug 61 [20]p. (foreign text included) 2 refs. Trafford Park trans. no. 3001; NLL M. 3468.
Order from OTS or SLA $1.60 62-23980

Trans. of Elekt[richeskie] Stantsii (USSR) 1961 [v. 32] no. 3, p. 49-55.

DESCRIPTORS: Power equipment, *Hydroelectric power systems, *Generators, *Bearings, Heating, Inhibition, Lubricants, Oils.

Investigations have demonstrated that the causes of the excessive temperature rise of the step bearing are the transfer of the hot oil film from one segment to another, which is caused by the high peripheral speeds, the narrow intersegmentary channels and the special features of the oil circulation and the deformation of the segments caused by the considerable unevenness of their temperature rise. The transfer of the hot oil from segment is considerably reduced with oil-pickup brushes (scrapers) installed between the segments. In this event there takes place a reduction in the temperature of the segments at the hot points by 14 to 21°C. The installation of oil-pickup brushes also leads to a reduction in the unevenness of the temperature rise of the segments, which, in its turn, reduces their temperature deformation. The construction of enlarged oil-collecting chambers did not lead to a drop in the temperature of the segments. (Author)

Gaba, E. S. and Petrushevskii, I. N.
TESTS ON TV2-100-2 TURBO-GENERATORS WITH AGP-1 AUTOMATIC FIELD EXTINCTION DEVICES (Ispytaniya Turbogeneratov TV2-100-2 s Avtomatami Gasheniya Polya AGP-1) tr. by V. Burdon. 11 Apr 61 [8]p. Trafford Park trans. no. 2836; NLL M. 3335.
Order from OTS or SLA $1.10 62-23928

Trans. of Elekt[richeskie] Stantsii (USSR) 1960 [v. 31] no. 4, p. 87-89.

DESCRIPTORS: Power equipment, *Turbines, *Generators, Electric fields, Electric arcs, Inhibition, Tests.

The results are discussed of tests carried out to establish the operating conditions of turbo-generators under asynchronous conditions with AGP-1 automatic devices.

Gritsenko, A. V. and Lysakovskii, G. I.
ANALYSIS OF THE DATA FROM AGEING IN OPERATION OF THE STATOR INSULATION OF A LARGE TURBO-GENERATOR (Analiz Dannykh Ekspluatatsionnovo Stareniya Izolyatsii Statora Krupnovo Turbogeneratora) tr. by V. Burdon. 7 Apr 61 [9]p. 1 ref. Trafford Park trans. no. 2835; NLL M. 3334.
Order from OTS or SLA $1.10 62-23927

Trans. of Elekt[richeskie] Stantsii (USSR) 1960 [v. 31] no. 4, p. 82-85.

DESCRIPTORS: Power equipment, *Turbines, *Generators, *Turbine stators, *Electric insulation, Dielectric properties, Aging, Analysis.

Results are given of breakdown tests on the bars of stator windings.

Malyarchikov, A. D.
ANWENDUNG VON AUSWUCHTMASCHINEN BEI DER HERSTELLUNG VON KOMPRESSOREN FUER HAUSHALTKUEHLSCHRÄNKE (Use of Balancing Machines in the Production of Compressors for Household Refrigerators).
Order from TIB $1.30

Trans. of Kholodil'naya Tekhnika (USSR) 1961, v. 38, no. 4, p. 39-42.

DESCRIPTORS: *Compressors, *Refrigerant compressors.

Migai, V. K.
THE EFFICIENCY OF A CROSS-RIBBED CURVILINEAR DIFFUSER. 11 Sep 62 [7]p. 2 refs. FTD-TT-62-1151; AD-287 667.
Order from OTS or SLA $1.10 63-13198

Unedited rough draft trans. of Energomashinostroenie (USSR) 1962 [v. 8] no. 1, p. 45-46.

DESCRIPTORS: *Diffusers, Tests, Reynolds number, Laminar boundary layer, Turbulence, Turbines.

A cross-ribbed diffuser was studied at high values of Re, corresponding to the operating conditions for diffusers in turbines and the efficiency of cross ribbing was investigated for a curvilinear diffuser. The investigations were conducted on a plane curvilinear diffuser model, the generatrices of which were constructed in the form of an arc of a circle. Such a curvature was provided in order to demonstrate the possibility of using cross-ribbing for prolonging high-intensity breakaway. It was concluded that cross-ribbing installed on the walls of curvilinear diffusers leads to an increase in their efficiency, and that the efficiency of a ribbed diffuser significantly depends upon the arrangement of the ribs in the flow section.

Portnoi, M. G.
RE-SYNCHRONIZATION OF SYNCHRONOUS GENERATORS (O Resinkhronizatsii Sinkhronnykh Generatorov) tr. by V. Burdon. 14 Apr 61 [19]p. (foreign text included) 7 refs. Trafford Park trans. no. 2792; NLL M. 3332.
Order from OTS or SLA $1.60 62-24656

Trans. of Elektrichestvo (USSR) 1960, no. 1, p. 73-78.

DESCRIPTORS: *Generators, *Turbines, Torque, Sychronizers.

This article sets forth a method of calculating the conditions under which synchronism is reestablished and the length of an asynchronous operation is determined. (Author)

Urintsev, Ya. S.
DEFECTS IN THE SOLDERED CONNECTIONS OF A TURBO-GENERATOR STATOR WINDING AND PREVENTIVE MEASUREMENT (Defekty Payanykh Soedinenii Obmotki Statora Turbogeneratora i Profilakticheskie Izmereniya) tr. by V. Burdon. 5 Apr 61 [5]p. Trafford Park trans. no. 2839; NLL M. 3336.
Order from OTS or SLA $1.10 62-23929

Trans. of Elekt[richeskie] Stantsii (USSR) 1960 [v. 31] no. 4, p. 85-87.

DESCRIPTORS: Power equipment, *Turbines, *Generators, *Turbine stators, Soldered joints, Resistance, Mechanical.

Methods are discussed of reducing the divergences of the dc resistances in the phases of turbo-generator windings.

Vocke, Wolfgang.
CALCULATING STRESS FOR FLANGE COUPLINGS. [1962] 27p. (figs. omitted) 9 refs.
Order from SLA $2.60 62-18299

Trans. of die Technik (East Germany) 1954, v. 9, no. 11, p. 615-622.

DESCRIPTORS: *Couplings, *Flanges, *Pipe fittings, Bolts, Stresses, Pressure, Mathematical analysis.

Formulas are determined for calculating the stresses on a pipe flange under an axially symmetrical strain. This stress is produced on the one hand in a radial direction by the internal pressure prevailing in the pipe and, on the other hand, by the longitudinal forces transmitted in the bolt area. The bolts take up the internal pressure in the pipe longitudinally and also the tightening force required in each case. The equations presented, which have been determined especially for the flange problem, are generally valid for every kind of flange stress of related pipe and plate rings. In order not to limit the validity of the formulas, no simplifying assumptions are made at the outset. Then the most important formula is emphasized in the discussion and a nomograph with three parameters is set up, from which the maximum stresses at given dimensions and internal pressures can immediately be read off. (Author)

REVIVED INTEREST IN F. A. TSANDER'S WORK ON SPACE FLIGHT. 13 Nov 62, 3p. AID rept. 62-179; [NASA N63-10408]. AD-290 816
Order from OTS or SLA $1.10 63-13415

Review of mono. Problema Poleta pri Pomoshchi Reaktivnykh Apparatov; Mezhplanetnye Polety (The Problem of Flight with the Aid of Reaction Vehicles; Interplanetary Flights) Moscow, 1961, 459p. [and] Aviatsiya i Kosmonavtika (USSR) 1962, v. 45, no. 8, p. 26-31.

DESCRIPTORS: *Space flight, *Space propulsion, Electrostatic fields, Magnetic fields, Solar energy, Solar rockets, Meteors, Interstellar matter, Electromagnetic shielding.

Revived interest in F. A. Tsanders' work on space flight is focused on the following: use of electrostatic force; use of magnetic force; use of solar energy; generation of solar attraction; and protection from meteors and dust.

Ordnance, Missiles, and Satellite Vehicles

Egorova, A. V.
THE INFLUENCE OF THE GRAVITATIONAL ATTRACTION OF THE SUN AND THE MOON ON THE MOTION OF AN ARTIFICIAL EARTH SATELLITE (Vliyanie Prityazheniya Luny i Solntsa na Dvizhenie Iskusstvennogo Sputnika Zemli) tr. by J. W. Palmer. Jan 62 [19]p. 3 refs. RAE Library trans. no. 983.
Order from OTS or SLA $1.60 63-13735

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 8, p. 46-56.

DESCRIPTORS: *Satellite vehicles, Motion, Sun, Moon, *Gravity, Perturbation theory, Equations of motion, Orbital trajectories, Elliptical orbit trajectories.

The variations in the osculating elements of a satellite orbit due to the gravitational attractions of the sun and the moon are obtained from Lagrange's planetary equations. The disturbing function is expanded in Legendre polynomials. For the moon, all perturbations due to the second and third order polynomials are included, but only secular terms are retained for the fourth order polynomial. For the sun, only terms due to the second order polynomial are necessary. The theory applies to all satellites whose distances from the earth lie between 1·2 and 10 earth radii. (Author)

Gal'perin, Yu. and Mulyarchik, T.
SATELLITES, ATMOSPHERE, AND ELECTRONS. 29 Oct 62 [9]p. FTD-TT-62-1547.
Order from OTS or SLA $1.10 63-13890

Unedited rough draft trans. from Pravda [Moscow] (USSR) 1962, 26 Sep, p. 6, cols. 1-3.

DESCRIPTORS: *Satellites (Artificial), Atmosphere, *Upper atmosphere, Electrons, Ions, Aurorae, Terrestrial magnetism.

In the article are recounted the scientific investigations which are being carried on with Cosmos III and Cosmox V satellites. (Author)

Sanitation and Safety Engineering

REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIALS: NOTES ON CERTAIN ASPECTS OF THE REGULATIONS. Safety series no. 7, STI/PUB/32. Sep 61, 108p.
Order from National Agency for International Publications, Inc., 801 Third Ave., New York, 22, N. Y. $1.50 as IAEA SU-32.

DESCRIPTORS: Materials, Radioactivity, *Transportation, *Safety, Radioactive isotopes, Labeled substances

Rupprecht, G.
TREATMENT OF ELECTROPLATING EFFLUENTS. [1962] 7p. (figs. refs. omitted).
Order from SLA $1.10 62-18607

Trans. of Metalloberfläche (West Germany) 1955, v. 9, [no. 5] p. 70B-73B.

DESCRIPTORS: Electroplating, *Wastes (Industrial), *Water supplies, Decontamination, Sanitary engineering, Metal poisoning, Neutralization.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Nadibaidze, Sh. G.
THE DEVELOPMENT OF THE SAKHALIN AND KURILE ISLANDS FISHING INDUSTRY (Razvivat' Rybmin Promyshlennost Sakhalina i Kurilskii Ostrovov) tr. by Milan A. Kravanja. 1 June 62 [6]p.
Order from OTS or SLA $1.10 62-32126

Trans. of Rybnoe Khozyastvo (USSR) 1961, v. 37, no. 12 p. 6-11.

DESCRIPTORS: *Fisheries, Production, Food, Preservation, Processing.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

FRICTION AND WEAR IN MACHINERY [1959] VOL. 13, tr. ed. by George Herrman. 1962, 263p.
Order from American Society of Mechanical Engineers, 29 W. 39th St., New York, N. Y. $7.50

Trans. of [Trenie i Iznos v Mashinakh (USSR) [1959] v. 13, 266p.].

DESCRIPTORS: *Machines, *Friction, *Lubrication.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 43. 14 Jan 63 [17]p. JPRS: 17123.
Order from OTS or SLA $1.60 63-15096

Trans. of Ogneupory (USSR) 1962 [v. 27, no. 11] p. 522-523 (excerpts) and from Sovetskaya Belorussiya (USSR) 1962, 13 Oct; Izvestiya (USSR) 1962, 11 Nov, p. 4; Trud, Moscow (USSR) 1962, 1 Nov, p. 2; Leninskoe Znamya (USSR) 1962, 9 Oct.

DESCRIPTORS: *Industrial production, Metals, Mechanical working, Material forming, *Metal forming presses, *Machines, Construction, *Machine tools, Supplies, Scheduling, Cutting tools, Milling machines, Hydraulic systems, Refractory materials, *Presses (Machinery).

Contents:
Careless and wasteful handling of machinery
USSR tool industry, by V. Barmash and others
Causes of tool shortage
The closed circle: what impedes the production of new machine tools, by P. Druzhinin and S. Zhuchenko
Kolomna machine tool builders require an accounting from the allied branches of industry: is it expedient to disperse experimentation?
(creative cooperation is the path to progress) by I. Shakhrai and V. Afanas'ev
Hydraulic and mechanical presses.

Nicole, Gaston.
HIGH SPEED SAW FOR THE CUTTING OF LOGS. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18559

Trans. of French patent 115,164, filed 7 Apr 25, pub. 16 June 26 (Priority: France, 8 Apr 24).

DESCRIPTORS: Trees, Wood, *Saws, Cutting tools.

Engines and Propulsion Systems

LOCKING METHODS FOR TURBINE-BUCKET ATTACHMENTS. 5 Oct 62, 1p. AID rept. 62-161; AD 287 287.
Order from OTS or SLA $1.10 63-13048

Abstract trans. of Referativnyi Zhurnal. 42: Silovye Ustanovki (USSR) 1962, no. 14, items 186-187.

DESCRIPTORS: *Turbine blades, Attachment.

Babenko, Kh. L.
INVESTIGATION OF GAS TURBINE STAGES WITH A LOW RATIO OF DIAMETER TO LENGTH (Issledovanie Stupenei Gazovoi Turbiny s Malym Otnosheniem D_{cp}/l_p) tr. by V. Burdon. 8 Dec 61 [14]p. (foreign text included). Trafford Park trans. no. 3022; NLL M. 3585.
Order from OTS or SLA $1.60 62-24676

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 2, p. 24-28.

DESCRIPTORS: *Gas turbines, *Turbine parts, Rotation, Tests, Gas flow, Turbine blades, Aerodynamic characteristics.

The results are given of experimental research on the rotation of two model stages of a gas turbine with a ratio of diameter to length = 2.95.

Deich, M. E. and Gubarev, A. V.
AN INVESTIGATION OF THE OPERATION OF TURBINE BLADES AT HIGH VELOCITIES (Issledovanie Rabochikh Reshetok Turbin pri Bol'shikh Skorostyakh). Feb 62 [17]p. 7 refs. RTS 2001.
Order from OTS or SLA $1.60 62-24772

Trans. of Teploenergetika (USSR) 1958 [v. 5] no. 12, p. 56-62.

DESCRIPTORS: *Turbine blades, Operation, Subsonic characteristics, Supersonics, Velocity.

New blade profiles for subsonic and near-sonic velocities have been tested over a wider range of Mach numbers. Recommendations are given concerning the design of the profiles for corresponding cascades. (Author)

Fedorov, V. I., Minyailenko, M. O., and Rusakov, S. S.
TEMPERATURE FIELD AND GRADIENTS IN ELEMENTS OF WELDED DISK TYPE TURBINE ROTOR UNDER STARTING CONDITIONS. 9 Nov 62 [9]p. 1 ref. FTD-TT-62-1363.
Order from OTS or SLA $1.10 63-13919

Unedited rough draft trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1961, no. 10, p. 1317-1322.

DESCRIPTORS: Turbines, *Turbine parts, Turbine blades, *Disks, Rotating structures, Temperature, Starting.

Shchekoldin, A. V. and Kiryukhin, V. I.
THE SPEED-CONTROL STAGES OF LOW AND AVERAGE CAPACITY TURBINES. 26 Feb 62 [13]p. 4 refs. FTD-TT-61-372.
Order from OTS or SLA $1.60 62-24935

Unedited rough draft trans. of Teploenergetika (USSR) 1961 [v. 8] no. 3, p. 36-40.

DESCRIPTORS: Turbines, *Steam turbines, *Speed regulators, Control systems, Turbine blades, Nozzles, Supersonics, Subsonic characteristics.

The results of investigations of the efficiency of the flow sections of double-row velocity stages, conducted on experimental devices of the Kaluga Turbine Works are given. (Author)

Zavadovskii, A. M.
EFFECT OF PITCH AND ANGLE OF GUIDE BLADES ON THE OPERATION OF A TURBINE STAGE (Vliyanie Shage i Ugla Ustanovki Napravlyayushchikh Lopatok na Rabotu Turbinnoi Stupeni) tr. by D. R. H. Phillips. 2 Oct 61 [9]p. (foreign text included). Trafford Park trans. no. 3024; NLL M. 3584.
Order from OTS or SLA $1.10 62-24677

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 4, p. 28-30.

DESCRIPTORS: Turbines, Turbine parts, *Turbine blades, Turbine wheels, Operation, Pitch (Motion).

Results are given of an investigation into the effect of the pitch and angle of the guide blades, with unaltered rotor wheel, on the operation of a stage with short blades and a high ratio of mean diameter to blade length.

Machine Parts and Mechanisms

Aksyonov, I. V., Kogan, V. B. and Kurochkin, A. P.
GERÄT ZUR AUSWAHLSORTIERUNG DER PUMPEN-ELEMENTTEILE (Apparatus for Sorting Components of Pump-elements). (text in German).
Order from TIB $1.10

Trans. of #Izmeritel'naya Tekhnika (USSR) 1961, no. 3, p. 7-8.

DESCRIPTORS: *Gears, *Pumps, *Selection.

Stefanovskii, B. S.
SMALL SCALE EJECTOR MODELS. 11 July 62 [23]p. 14 refs. FTD-TT-62-448. AD-286 139.
Order from OTS or SLA $2.60 62-32290

Unedited rough draft trans. of Nauchnye Doklady Vysshei Shkoly. Mashinostroenie i Priborostroenie (USSR) 1958, no. 1, p. 75-86.

DESCRIPTORS: *Jet pumps, Model tests, *Jet mixing flow, Nozzles, Sprays, Diffusers.

Manufacturing Equipment and Processes

NOODLES MOLDING DEVICE. 16 August 1962, 5p. (foreign text included). 24040/61 Japan.
Order from INT $20.50

Trans. of Japanese patent 24040/61 by Shin-ichi Nomi of 3-6-Juso-Higashino-machi, Higashi-yodogawa-ku, Osaka City, filed 11 Nov 59.

DESCRIPTORS: *Molding, Molding materials.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METAL-WORKING EQUIPMENT NO. 44. 21 Jan 63 [18]p.
JPRS: 17204.
Order from OTS or SLA $1.60 63-15391

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 11, p. 49-53, 56-60 (excerpts); Mashinostroitel' (USSR) 1962, no. 11, p. 17 (excerpts) p. 42-44; and from Pravda, Moscow (USSR) 1962, 18 Nov, p. 4.

DESCRIPTORS: Industrial production, Metallurgy, *Industrial equipment, *Machine tools, *Lathes, *Grinders, *Bearings, Production

Contents:
The master machine tool, by Yu. Kham'yanov
Machine tools produced by various plants
Turret lathe and straightening-stretching machine
Modern grinding machines and new grinding methods, by G. B. Lur'e
Automatic universal bearing shop, by I. A. Sauskan.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 53. 16 Jan 63 [64]p.
JPRS: 17159.
Order from OTS or SLA $6.60 63-15088

Trans. of 25 selected articles, advertisements and photo-captions from 11 Soviet journals and newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, Refrigeration systems, Pyrometers, Cameras, Telescopes, Artifical heart, Mechanical organs, Management engineering, Loudspeakers, Sound recording systems, Television receivers, Conveyors, Automation, Control systems, Optical equipment, Chemical analysis, Laboratory equipment, Photographic paper, Radiosondes, Motion picture cameras, Color photography, Photographic processors

Chedaille, J. and Horvais, M.
STUDY OF SPLASHES PRODUCED BY VERTICAL TOP BLOWING ON TO A BATH OF WATER. Jan 63.
Order from BISI 2 BISI-3057

Trans. of Centre de Documentation Sidérurgique. Circulaires d'Informations Techniques (France) 1962, v. 19, no. 2, p. 361-366.

DESCRIPTORS: *Industrial equipment, Cooling, *Water, *Sprays.

Krupp, Fried.
LEAD CABLE PRESS. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18457

Trans. of German patent 548, 731, 12 June 31.

DESCRIPTORS: *Cables (Mechanical), *Lead, *Machines, *Metal-forming presses, Manufacturing methods.

Pashulya, P. L., Tremut, V. M., and Glushko, V. D.
METHOD OF ETCHING FORMS FOR LETTERPRESS PRINTING. [1962] 2p.
Order from OTS or SLA $1.10 62-14767

Trans. of Russian author's certificate 112, 274, cl. 15b, appl. 4 July 57 under no. 580, 158.

DESCRIPTORS: *Printing, Manufacturing methods, Nitric acid, Colloids, Xylene, Gelatin.

A method of etching letterpress printing forms without engraving, consisting in that the plates are made by means of a current of etching liquid which is perpendicular to the surface of the plate, containing a 6% to 9% solution of nitric acid with an addition of substances to prevent lateral undercutting, characterized in that with the object of accelerating and cheapening the process, Nekal, technical xylene and gelatin are used in order to avoid lateral undercutting. (Author)

Skopik, L.
DEVICE FOR THE MACHINING OF TUBULAR WORK-PIECES WITH STRAIGHT OR CURVED AXES. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18472

Trans. of German patent 466,844, 14 May 30, cl. 49 a, gr. 12, pub. 27 Sep 27, pat. from 15 Feb 25, suppl. to patent 454,142, main patent began 20 Feb 24.

DESCRIPTORS: *Machining, *Pipes, Tools, Rotation, *Mounting brackets, Processing.

Spiridonov, A. A. and Semkin, A. A.
BASIC DATA ON VIBOR-ARC SURFACING. 29 Oct 62 [14]p. FTD-TT-62-1250.
Order from OTS or SLA $1.60 63-13926

Unedited rough draft trans. of mono. Novoe Oborudovanie dlya Avtomaticheskoi Vibrodugovoi [Naplavki] Moscow, 1961, p. 5-14.

DESCRIPTORS: *Electric welding, Welding, Electric arcs, Vibrators, Vibration, Surfaces.

Terekhov, L.
APPLICATION OF LINEAR PROGRAMMING IN THE PLANNING OF ASSORTMENT. 31 Jan 63 [21]p. JPRS: 17405.
Order from OTS $0.50 63-21033

Trans. of Planovoe Khozyaistvo (USSR) 1962 [v. 39] no. 11, p. 72-78.

DESCRIPTORS: *Linear programming, Scheduling, Management engineering, *Industrial production, Production, Economics.

Trutko, A. and Fedotov, Ya.
THE CRYSTAL IS SMALL BUT POWERFUL. 29 Jan 63, 5p. JPRS: 17351.
Order from OTS $0.50 63-21008

Trans. from Izvestiya (USSR) 1962, 7 Dec, p. 4.

DESCRIPTORS: Crystals, *Semiconductor devices, Manufacturing methods, Materials, Purification, Material forming.

A nontechnical account on the manufacture of semiconductor devices.

Veinik, A. I.
THEORY OF SPECIAL CASTING METHODS. 1962, 316p.
Order from American Society of Mechanical Engineers, 29 West 39th St., New York, N. Y. $8.00

Trans. of mono. [Teoriya Osobykh Vidov Lit'ya, Moscow, 1958, 299p.].

DESCRIPTORS: *Casting, Theory, Dies, Material forming.

Transport, Traction and Hoist Facilities

Bold, B. V. and Opolenski, E. P.
DIE BERECHNUNG DER HALBACHSEN EINES KRAFT FAHRZEUGS AUF BETRIEBSFESTIGKEIT (Calculation of the Semiaxis of a Motorcar in Respect of Stability). (text in German).
Order from TIB $1.30

Trans. of Avtomobil'naya Promyshlennost'(USSR) 1962, [v. 28] no. 2, p. 23-26.

DESCRIPTORS: *Vehicles, Stability.

Fauss, Karl and Müller, Hugo.
DEVICE FOR MEASURING WHEEL SETS FOR RAILWAY VEHICLES. 19 May 55, 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-18448

Trans. of German patent 475,229, 20 Apr 29, cl. 42 b, gr. 22, A 41009 IX/42b, granted 11 Apr 29, pat. from Nov 23, by General Electric Co.

DESCRIPTORS: *Vehicle wheels, Measurement, *Railroad cars, *Test equipment.

Gur'ev, S. V.
POSSIBILITY OF USE OF HAULAGE BY INTERNAL COMBUSTION ENGINED LOCOMOTIVES IN OPENCAST MINES (O Vozmozhnosti Primeneniya na Kar'erakh Teplovoznoi Tyagi). [1962] 10p. 1 ref. [Warren Spring Lab. Trans.] NT569; [DSIR] NLL M. 4978.
Order from OTS or SLA $1.10 62-25902

Trans. of Ugol (USSR) 1953 [v. 28, no. 10] p. 19-23.

DESCRIPTORS: *Locomotives, *Internal combustion engines, Mines, Transportation, Coal mines.

The economics of steam, electric and internal combustion engine haulage are examined. Locomotives with dual fuel engines and gas producers are shown to have great possibilities, given gas producers which give high quality gas from brown coal. Two Soviet locomotives with gas producers are illustrated. (Fuel Abstracts, Apr. 1954, vol. 15, 2701).

Il'in, I. N. and Semichastnov, I. F.
DER EINFLUSS DER FORM DER ARBEITSRÄDER AUF DIE EIGENSCHAFTEN DES EINSTUFIGEN HYDRODYNAMISCHEN WANDLERS (The Influence of the Shape of the Runners on the Properties of the Single-stage Hydrodynamic Transmission). 12p. (text in German).
Order from TIB $2.10

Trans. of Avtomobil'naya Promyshlennost'(USSR) 1958, no. 6, p. 13-18.

DESCRIPTORS: *Hydrodynamics, Gears, Transmissions.

Khodzhaev, S. M.
UZBEKISTAN TRANSPORTATION. 28 Jan 63, 174p. 92 refs. JPRS: 17327.
Order from OTS $3.00 63-21002

Trans. of mono. Transport Uzbekistana, Tashkent, 1961, 212p.

DESCRIPTORS: *Transportation, History, *Economics, Statistical data, Air transportation, Railroads, Cargo, Inland waterways, Roads.

Contents:
Transport during the revolution and the beginning of Socialist transformation of the Uzbek economy (November 1917-June 1918)
Uzbekistan transport during the period of formation of the economic basis for socialism in the Republic (1928-1932)
Transport during the period of economic reconstruction and the victory of Socialism in Uzbekistan (1932-1940)
Uzbekistan transport during the Great War for the Fatherland and the post-war period
Uzbek transport during the period of great upswing in the Socialist economy (1951-1958)
The relationship between various forms of transport in the Republic
Basic trends in transport development.

Mel'nikov, A. A.
EINIGE ERGEBNISSE DER UNTERSUCHUNG DER CHARAKTERISTIK DER AUFHÄNGUNG EINES LASTKRAFTWAGENS (Some Results in Testing the Characteristics of Mounting Cargo Trucks). (text in German)
Order from TIB $1.55

Trans. of Avtomobil'naya Promyshlennost'(USSR) 1962 [v. 28] no. 2, p. 30-34.

DESCRIPTORS: *Tests, Cargo vehicles.

Rodionov, V. F.
DIE PROJEKTIERUNG DER AUFHÄNGUNG DES ANTRIEBSAGGREGATES VON PERSONENKRAFTFAHRZEUGEN (Projecting the Mounting of the Driving Unit of Passenger Cars). (text in German).
Order from TIB $2.10

Trans. of Avtomobil'naya Promyshlennost'(USSR) 1962 [v. 28] no. 4, p. 9-15.

DESCRIPTORS: *Mechanical drives, *Passenger vehicles.

Slyodikov, L. D.
BOMBIEREN VON REIFENKARKASSEN MIT MERIDIONALER CORDFADENRICHTUNG (Curving of Tire-car casses with Meridional Cord Filament). 3p. (text in German).
Order from TIB $0.95

Trans. of #Kauchuk i Rezina (USSR) 1962, v. 21, no. 3, p. 43-45.

DESCRIPTORS: *Tires, Filaments, Cordage.

Tikhmenev, B. N.
PROTECTION OF LOCOMOTIVE RECTIFIERS AGAINST ARC-BACKS (Zashchita Elektrovoznykh Vypryamilelei ot Obratnykh Zazhiganii). 21 Aug 61 [12]p. (foreign text included). Trafford Park trans. no. 3035; [DSIR] NLL M. 3473.
Order from OTS or SLA $1.60 62-24904

Trans. of Elekt[richeskaya i] Teplovoz[naya] Tysga (USSR) 1961, no. 4, p. 31-34.

DESCRIPTORS: Railroads, *Locomotives, Electrical equipment, *Rectifiers, Safety devices, Circuits, Generators, Electric currents, Reduction.

Methods are discussed of reducing the generator currents and improving the rectifiers of N60 locomotives under emergency conditions.

MATERIALS

METHOD FOR SEPARATING OF LOW-MOLECULAR WEIGHT SUBSTANCE FROM POLYCAPRAMIDE. 13 August 62, 4p. (foreign text included). 8896/56 Japan.
Order from INT $13.00

Trans. of Japanese patent 8896/56 by Toyo Rayon Co. Ltd. 2-1-1-Nihonbashi-muromachi, Chuo-ku, Tokyo, filed 3 April 54.

DESCRIPTORS: *Capric acids, *Amides, *Polymers, Molecular weight, Separation.

PROCESS FOR THE MANUFACTURE OF FORMALDEHYDE POLYMER HAVING HIGH MOLECULAR WEIGHT. 19 July 1962, 9p. (foreign text included). 7643/62 Japan.
Order from INT $44.00

Trans. of Japanese patent 7643/62 by Nippon Hooshasen Koobunshi Kenkyukyokai, Inc., Tokyo and Sumitomo Kagaku Kogyo Co. Ltd. Osaka City, publ. 9 Juli 1962.

DESCRIPTORS: *Formaldehyde, *Polymers, Molecular weight, Production.

STABILIZING METHOD FOR POLYACETOLS. 13 August 1962, 13p. (foreign text included). 13440/61 Japan.
Order from INT $57.00

Trans. of Japanese patent 13440/61 by Nihon Shokubai Kagaku Kogyo Co. Ltd. 4973-1 Suita City, filed 23 April 59.
Another trans. is available from ATS $15.65 as ATS-30P59J [1962] 8p.

DESCRIPTORS: Acetyl radicals, Alcohols, *Polymers, Processing, *Stabilization.

Konopicky, K.
SUGGESTIONS FOR THE ESTABLISHMENT OF A "STONE MAP". Paper presented at the Glass Smelting Festival, Essen, West Germany, 24 Jan 57. [1962] [25]p.
Order from SLA $2.60 62-18181

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Refractory materials, *Ceramic materials, *Glass, Rock, *Iron industry, Petrology, Classification, Standards, Geography, Geology, Bricks, Industrial procurement.

Waltz, P.
CONTROL OF THE RESISTANCE TO DRAW, OF THE DIAMETER, AND OF THE COMPRESSIBILITY OF CIGARETTE FILTERS. [1962].
Order from K-H $7.50 K-H 10833 b

Trans. of Rev[ue] Intern[ationale des] Tabacs (France) 1960, v. 35, no. 330/331, p. 147, 149, 158.

DESCRIPTORS: Control, Resistance, *Cigarettes, Tobacco, *Smokes, *Compressive properties, *Particulate filters.

Yakubchik, A. I. and Griliches, S. A.
DIE BEFESTIGUNG DES POLYÄTHYLENS AN METALLEN UND AN GUMMI (Bonding of Polyethylene to Metals and to Rubber). (text in German).
Order from TIB $0.85

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1961, v. 34, no. 11, p. 2579-2581.

DESCRIPTORS: *Ethylene derivatives, Metals, Rubber, *Bonding.

Adhesives and Sealants

Fuchslocher, Gerhard and Schaible, Robert.
PROCESS FOR DETERMINING THE ADHESIVENESS OF THIN LAYERS TO SOLID BASES, AND APPARATUS FOR CARRYING OUT THE PROCESS. [1962] 6p. (figs. omitted) 1 ref.
Order from OTS or SLA $1.10 62-18510

Trans. of German patent 1,122,289, cl. 42 k 53, internat. cl. C 011 n, F 22892 IXb/42k, appl. 20 Apr 57, granted and pub. 18 Jan 62, by Forschungsinstitut für Pigmente und Lacks e.V.

DESCRIPTORS: *Thin films, Coatings, Adhesion, Solids, *Adhesives, Test methods.

Möhler, Karl.
CEMENTING OF STEEL WITH PLASTICS ADHESIVES. [1962] [25]p. 9 refs.
Order from SLA $2.60 62-18808

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1959, v. 101, no. 1, p. 1-8. Other translations are available from SLA $1.60 as 62-14524 [1960] [15]p.; SLA $1.60 as 61-20944, 9 Feb 59 [17]p. (partially abridged) and from BISI £6 as BISI-1648 [1960]

DESCRIPTORS: *Steel, Bonding, *Resin adhesives, Joints, Bridges, Pipes, Traffic, Foundations (Structures), Adhesives.

For abstract see Technical Translations 7: 286, 1962.

Ceramics and Refractories

METHOD AND APPARATUS FOR THE PRODUCTION OF HOLLOW BODIES AND FORMED MEMBERS OF FUSIBLE CERAMIC MATERIALS BY CENTRIFUGAL CASTING. 29 Oct 47, 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-18482

Trans. of German patent 717,188, 7 Mar 42, granted 15 Jan 42, pat. from 14 Aug 38.

DESCRIPTORS: *Molding, *Machines, *Ceramic materials, *Centrifugal casting, Material forming, Fused materials

METHOD FOR THE PRODUCTION OF CERAMIC SLIPS CONTAINING MAGNESIUM SILICATE. 29 Oct 47, 2p.
Order from OTS or SLA $1.10 62-18477

Trans. of German patent 705,568, 3 May 41, granted 27 Mar 41, pat. from 3 Apr 38.

DESCRIPTORS: *Ceramic materials, Processing, *Silicates, *Magnesium compounds, Oxides, Barium compounds, *Crystallization.

METHOD FOR THE PRODUCTION OF THIN TUBES OR PLATES OF CERAMIC MATERIAL FOR TECHNICAL PURPOSES. 29 Oct 47 [1]p.
Order from OTS or SLA $1.10 62-18483

Trans. of German patent 699,664, 4 Dec 40, granted 7 Nov 40, pat. from 8 Oct 36.

DESCRIPTORS: Molding, *Ceramic materials, Processing, *Material forming, *Filter papers, *Impregnation.

METHOD FOR THE PRODUCTION OF THIN TUBES OR PLATES OF CERAMIC MATERIAL FOR TECHNICAL PURPOSES. 29 Oct 47 [1]p.
Order from OTS or SLA $1.10 62-18478

Trans. of German patent 708,900, 31 July 41, granted 26 June 41, pat. from 7 Apr 37, main patent initiated 8 Oct 36.

DESCRIPTORS: Molding, *Ceramic materials, Processing, *Material forming, *Filter papers, *Impregnation, Ceramic coatings.

SEMINAR: PRODUCTION METHODS, PHYSICAL PROPERTIES, AND ELECTRONIC STRUCTURE OF THE REFRACTORY METALS, THEIR COMPOUNDS AND ALLOYS: SUMMARIES OF REPORTS. 28 Jan 63 [58]p. JPRS: 17322.
Order from OTS or SLA $5.60 63-15382

Trans. of mono. Seminar: Metody Polucheniya, Fizicheskie Svoistva i Elektronnoe Stroenie Tugoplavkikh Metallov, Ikh Soedinenii i Splavoi: Tezisy Dokladov, Kiev, 1961, 64p.

DESCRIPTORS: *Abstracts, *Refractory materials, Metals, Alloys, Chemical compounds, Production, Physical properties, Atomic structure, Electrons.

Bautsch, Hans-Joachim.
NORMATIVE AND MODAL MINERAL CONTENT OF CHROME-MAGNESITE BRICKS (Normativer und Modaler Mineralbestand von Chrommagnesitsteinen). [1962] [12]p. (foreign text included) 9 refs.
Order from SLA $1.60 62-18183

Trans. of Silikat Technik (East Germany) 1958, v. 9, no. 12, p. 552-555.

DESCRIPTORS: *Brick, *Minerals, *Refractory materials, *Magnesite, Chromium, Quantitative analysis, *Microscopy, Microstructure, Hardness, Optical properties, Crystals, Growth, Crystal structure, Silicates, Steel industry, Spinels.

Furuuchi, Shigemasa.
EFFECT OF THE ADDITION OF MINOR CONSTITUENTS UPON HOMOGENEITY OF THE SODA-LIME GLASS USING CARBON AND SALT CAKE. Pt. 2 of Study of the Homogenizing Process of Molten Glass by Centrifugal Density Spread Technique. [1962] [14]p. (foreign text included) 5 refs.
Order from SLA $1.60 62-10962

Trans. of [Asahi Garasu Kenkyu Hokoku] (Japan) 1959, v. 9, p. 30-35.

DESCRIPTORS: *Glass, Calcium compounds, Oxides, Dioxides, Silicon compounds, Additives, Atomic properties, Carbon, Sodium compounds, Sulfates, Impurities.

The substitution of salt cake for soda ash and the addition of carbon had the great influences upon homogeneity of glass. At 3% carbon-salt cake ratio, initial 5% substitution ratio of salt cake for soda ash improved the homogeneity most pronouncedly and about 15% substitution showed the best result. When substitution of salt cake for soda ash was kept constant at 15% the glass homogeneity increased gradually with carbon addition reaching the best homogeneity at 3-5% of carbon-salt cake ratio. If carbon is added in excess of the above ratio, the homogeneity deteriorated rapidly. The addition of K_2O, PbO, P_2O_5, V_2O_5 and F improved homogeneity, while that of ZnO, Al_2O_3, Fe_2O_3, ZrO_2 and CeO_2 deteriorates it. In the case of alkali elements, for example, the glass improved their homogeneity as the atomic number of additive component increased, while in VA group with decreased atomic number. (Author)

Helm, Georg.
CALIBRATION OF GLASS TUBES, I-[II] (Kalibrieren von Glasrohren, I. Teil [und] Schluss). [1962] [20]p. 1 ref.
Order from SLA $1.60 62-18114

Trans. of Glas-Email-Keramo-Technik (West Germany) 1953 [v. 4] no. 5, p. 172-175, and no. 7, p. 247-249.

DESCRIPTORS: Medical equipment, Precision finishing, *Pipettes, *Glass, *Calibration, Laboratory equipment, Medical laboratories, Capillary tubes, *Precision equipment.

Calibrating the bores of glass tubes drawn manually or by machines in making medical or scientific precision instruments is a necessity. In principle three different methods of calibration may be distinguished: a cold method by cylindrically grinding out the crude glass tubes: a warm method by precipitating softened glass substance on an accordingly dimensioned moulding core or by expanding an originally not sufficiently wide crude glass tube by forcing a mandrel into it. Further more a calibrating method is described in which an exact exterior form of a glass tube is attained by widening the softened tube and pressing it against the inside wall of a hollow mould. (Author)

Rasch, Rudolf.
RESEARCH DATA RELATIVE TO THE ATTACK OF GLASS ON REFRACTORY BRICK. (Der Glasangriff auf Wannensteine im Spiegel von Forschung und Betriebserfahrung. IV. Forschungsergebnisse Bezüglich des Glasangriffs auf Feuerfeste Steine). Pt. 4 of The Attack of Glass on Tank Blocks as seen by Research and Operating Experience. [1962] [17]p. (foreign text included) 50 refs.
Order from SLA $1.60 62-18200

Trans. of Glas-Email-Keramo-Technik (West Germany) 1955, v. 6, no. 1, p. 1-5.

DESCRIPTORS: *Tanks (Containers), *Refractory materials, *Glass, Thermal stresses, Model tests, Industrial research, Chemical industry, Silicates, Brick.

Rodloff, G.
MORE RECENT INVESTIGATIONS ON COMPOUND SAFETY GLASS FOR WINDSHIELDS (Neuere Untersuchungen an Verbund-Sicherheitsglas für Windschutzscheiben). [1962] [25]p. (foreign text included) 4 refs.
Order from SLA $2.60 62-18916

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1962, v. 64, no. 6, p. 179-184.

DESCRIPTORS: Scientific research, *Laminated glass, *Windshields, Elasticity, *Thickness, Tensile properties.

It was the aim of the experiments conducted to develop a highly flexible windshield material with a rubber-like character as a compound safety glass which can become effective in the manner of a safety-net. This character becomes the more distinct, the thinner the

glass of the compound combination toward the inside of the car. The phantom strength increases considerably at the same time without decreasing the strength with respect to external influences. The resistance to wind pressure does not decrease because only the outer and and thicker 3 mm glass pane comes into consideration for the bending strength. The same applies also to the impact of stones. The rubber-like character of compound safety glass, however, is guaranteed only when the optimum elasticity state of the foil-maintenance of a certain moisture content - is adjusted during manufacture. The rubber-like character of compound safety glass is so extensively influenced by the glass thicknesses utilized, that thicker foils are necessary already with an increase of the glass thickness from 5.0 to 6.6 mm. The required phantom strengths are maintained by compound safety glass of normal construction in a range from +30°C to -10°C. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Agroshkin, A. A. and others.
DIE FEUCHTIGKEITSBILANZ BEI DER VERGASUNG UNTER TAGE (The Humidity Balance during Gasification Underground). (text in German).
Order from TIB $1.20

Trans. of Podzemnaya Gazifikatsiya Uglei (USSR), 1958, [v. 2] no. 1, p. 25-28.

DESCRIPTORS: Humidity, Balances, Degasification, Coal.

Ammosov, I. I., Sukhenko, S. I. and others.
THE CALCULATION OF COKE-OVEN CHARGES ON THE BASIS OF THE PETROGRAPHIC COMPOSITION OF COALS. [1962] [12]p. 5 refs. NCB Trans. A1969/SEH; [DSIR] NLL M. 3483.
Order from OTS or SLA $1.60 62-24901

Trans. of [Akademiya Nauk SSSR]. Institut Goryuchikh Iskopaemykh. Trudy, 1959, v. 8, p. 21-30.

DESCRIPTORS: *Coke, Ovens, Fuels, *Coal, *Petrology, Classification.

Gillet, A. and Colson, P.
FROM CELLULOSE TO ANTHRACITE. IX. EXPERIMENTAL CONTRIBUTION: THERMAL HYDROLYSIS OF CELLULOSE (De la Cellulose à l'Anthracite. IX. Contribution Expérimentale: Thermhydrolyse de la Cellulose]. Paper presented at International Conference on Coal Science (no. 2) Valkenburg, May 57. [1960] 6p 1 ref.
Order from SLA $1.10 62-16878

Trans. of Brennstoff-Chemie (West Germany) 1958, v. 39, Sonderausgabe, p. 17-19.
Another trans. is available from BISI £ 1 15s as BISI-1694 [1960].

DESCRIPTORS: *Cellulose, *Hydrolysis, Heat, Production, *Charcoal, Water, Pressure.

The authors present results of experiments on the treatment of cellulose in water under pressure. The results cover the range from 150° to 350°C and the tests vary in duration from one minute to two hours. New conclusions on carbonization of cellulose are presented graphically on three diagrams. (Author)

Kalmykov, N. V.
GASIFICATION OF LOW TEMPERATURE COAL COKE IN A SLAGGING PRODUCER WITH CARBON DIOXIDE-OXYGEN AND STEAM-OXYGEN BLAST (Gazifikatsiya Kamennougol'nogo Polukoksa v Generatore s Zhidkim Shladoudaleniem na Uglekislotno-Kislorodnom i Parokislorodnom Dut'e). [1962] 14p. [Warren Spring Lab] Trans. NT 633; DSIR NLL M. 3608.
Order from OTS or SLA $1.60 62-25288

Trans. of Gaz[ovaya] Prom[yshlennost'] (USSR) 1956 [no. 7] p. 8-14.

DESCRIPTORS: Fuels, *Gases, *Carbon compounds, Monoxides, *Hydrogen, Production, Coal, *Coke, Carbon dioxide, Oxygen, Steam.

Successful full-scale trials are recorded with a diagram of the plant and performance data for the two types of blast. The process is simple and economical and the gas produced is up to 97 per cent carbon monoxide and hydrogen and hence suitable for synthesis. (Fuel Abstract, 1956, vol. 20, 4404).

Seeber, Fritz.
TESTING HIGH ANTIKNOCK FUELS IN SINGLE-CYLINDER AVIATION ENGINES. [1962] 8p. 11 refs.
Available on loan from SLA 63-10462

Trans. of Luftfahrtforschung (Germany) 1939, v. 16, no. 1, p. 18-22.

DESCRIPTORS: Fuels, *Aviation fuels, Antiknock, Test methods, Airplane engines.

A method is developed which, in contrast to the octane number determination, permits the testing of a motor fuel under varying temperatures and air-fuel ratios. (Author)

Wehner, R. A.
ZUR BESTIMMUNGSMETHODIK DER AKTIVITÄT VON KOHLEARGILLITEN (On the Determination Method of the Activity of Coal Argillites). 9p. (text in German).
Order from TIB $1.70

Trans. of Akademiya Nauk SSSR. Institut Goryuchikh Iskopaemykh. Trudy. 1960, v. 14, p. 136-142.

DESCRIPTORS: *Coal, *Minerals, *Radioactivity, Determination.

Leather and Textiles

IMPROVING METHOD FOR LIGHT FASTNESS OF NYLON. 28 August 1962, 4p. (foreign text included). 8498/57 Japan.
Order from INT$11.00

Trans. of Japanese patent 8498/57 by Toyo Rayon Co. Ltd. 2-1 Nihombashi-muromachi Chuo-ku, Tokyo, filed 16 August 55.

DESCRIPTORS: *Nylon, Light, Chemical properties.

PROCESS FOR THE TREATMENT OF NONNITROGENOUS FIBER. 25 July 1962, 7p. (foreign text included). 8492/57 Japan.
Order from INT $22.50

Trans. of Japanese patent 8492/57 by Hodogaya Kagaku kogyo Co. Ltd., 3 Shiba-Toranomon, Minato--ku, Tokyo, filed 14 Nov 53.

DESCRIPTORS: Textiles, *Fibers, Processing.

Feltzien, Wilhelm.
METHOD AND DEVICE FOR TESTING THE SMOOTHNESS OF TEXTILE THREADS. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18461

Trans. of German patent 622,773, Oct 34, by Textile Research Institute of Krefeld E. V.

DESCRIPTORS: *Test equipment, *Textiles, *Threads, Friction, Strain gages.

Hiroshi, Kawakami and Lee, Shoki.
THE RESEARCH ON THE DRAWING OF P. V. A. FIBER. [1962] [16]p. 4 refs.
Order from SLA $1.60 62-18938

Trans. of Kobunshi Kagaku (Japan) 1946, v. 3, p. 13-20

DESCRIPTORS: *Polyvinyl alcohol, Fibers (Synthetic), Drawing (Machine processing), Tensile properties.

Kanetsuna, Hisaaki.
ON THE SWELLING OF 6 NYLON IN AQUEOUS PHENOL SOLUTION AND THE BEHAVIOR OF PHENOL ABSORPTION. Rept. no. 2 [Pt. 9]. of the Studies on the Fine Structure of 6 Nylon by Phenol Absorption. [1961] 14p. (6 figs. omitted) 5 refs.
Order from SLA $1.60 62-10716

Trans. of [Sen'i Kogyo Shikensho Iho] (Japan) [1959] no. 49, p. 69-76.

DESCRIPTORS: *Synthetic fibers, *Nylon, Physical properties, Crystallization, *Phenols, Absorption.

Tests showed that most of the increase in the amount of the fiber swelling which takes place in an aqueous solution of phenol is due to the absorption of phenol. The amount of water which is absorbed is extremely small. The absorption heat of phenol on the 6-nylon fibers is minus 2.3 kilocalories per mol. When the concentration of the aqueous solution of phenol is low, the law of partition of phenol becomes valid between the 6-nylon fibers and water. In this case, it is assumed that phenol is absorbed into the non-crystalline amorphous regions of the 6-nylon fibers. When the concentration of phenol reaches a certain value, the so-called intermediate regions change non-crystalline amorphous. Also, when the concentration of the aqueous solution increases, the regions are gradually converted into the amorphous state, starting with regions of lower order, and the apparent coefficient of partition gradually increases. When the concentration of the aqueous solution of phenol increases further, even the perfectly crystalline regions are converted into the amorphous state. The amount of the absorption of phenol increases rapidly and the form of the fibers is lost to be converted into the "liquid bottom body." At the end, the law of partition of phenol again becomes valid between the 6-nylon fibers and water with everything having been converted in the amorphous state. (See also 62-10717)

Photographic Materials

PHOTOCONDUCTIVE LAYERS FOR ELECTROPHOTOGRAPHY. [1962] 7p.
Order from OTS or SLA $1.10 62-18569

Trans. of French patent 1,268,696, 26 June 61, by Kalle AG, West Germany, appl. no. 836,079, 18 Aug 60, German appl. no. K 38,485, 20 Aug 59 (pub. in Bull[etin] Off[iciel] de la Propriété Industrielle (France) 1961, no. 31).

DESCRIPTORS: *Photoconductive films, *Electrophotography, Polymerization, Copolymerization, Ethylenes, Ketones, Catalysts.

This invention describes a method for producing photoconductive layers for electrophotography. They consist of at least one product of polymerization or copolymerization of olefinic ketones that contain at least one of the polymerizable groups -CH=CH-CO- or -CH=CH-CO-CH=CH- in their molecule. These photoconductive layers contain, in addition, a certain proportion of activators. (Author)

PHOTOCONDUCTIVE LAYERS FOR ELECTROPHOTOGRAPHY. [1962] 8p.
Order from OTS or SLA $1.10 62-18570

Trans. of French patent 1,273,106, 28 Aug 61, by Kalle AG, Germany, appl. no. 842,626, 29 Oct 60, German appl. no. K 39,057, filed 31 Oct 59 (pub. in Bulletin Officiel de la Propriété Industrielle (France) 1961, no. 40).

DESCRIPTORS: *Photoconductive films, *Electrophotography, Polymers, Polmerization, Acrylic acids, Esters, Alkyl radical, Catalysts, Heterocylic compounds.

A method for the manufacture of photoconductive substances for electrophotography is described. These substances are hydroxylated, primary, aromatic and/or heterocyclic with acryl chloride and/or the chloride of α-alkyl acrylic acid, in the presence of an agent that fixes the acid, and the acrylic ester is then polymerized (Author)

REPRODUCTION METHOD. 4 Juli 1962, 3p. (foreign text included). 7832/61 Japan.
Order from INT $18.00

Trans. of Japanese patent 7832/61 by Oriental Shashin Kogyo Co., Tokyo., filed 5 Nov. 1958.

DESCRIPTORS: *Reproduction, Processing.

Bakan, Joseph A., Striley, David J. and Maierson, Theodore.
PRINTING SHEET WITH MATRIX BREAKABLE BY PRESSURE. [1962] 36p. (figs. omitted).
Order from OTS or SLA $3.60 62-18500

Trans. of Belgian patent 607,355, 21 Aug 61, by National Cash Register Co. (U. S. appl. no. 52,195, 26 Aug 60 and 60,078, 3 Oct 60).

DESCRIPTORS: *Photographic processors, *Color film, *Photographic emulsions, Styrenes, Copolymers, Polymers, Acrylic acid, Maleic anhydride.

Borin, A. V., Logak, P. I. and others.
INVESTIGATION OF THE FACTORS INFLUENCING THE CONCENTRATION EFFECT IN OPTICAL SENSITIZATION. [1962] 8p.
Order from ATS $14.50 ATS-77P65R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 4. p. 245-251.

DESCRIPTORS: *Photographic emulsions, Sensitivity.

Dulmage, W. J. and Jarvis, J. G.
XEROTHERMOGRAPHIC REPRODUCTION PROCESS WITH TRANSFER AND APPARATUS FOR PUTTING THIS PROCESS INTO OPERATION. [1962] 15p.
Order from OTS or SLA $1.60 62-18685

Trans. of Belgian patent 602,975 by Kodak S. A., publ. 24 Apr 61 (priority: USA, 27 Apr 60, no. 25109).

DESCRIPTORS: *Electrophotography, Lithography Recording devices, Static electricity.

Eastman, D. R.
A NEW PHOTOCONDUCTOLITHOGRAPHIC PROCESS [1962] [7]p.
Order from OTS or SLA $1.10 62-18506

Trans. of Belgian patent 606,702, 28 July 61, by Kodak S. A. (U. S. application no. 45,949, 28 July 60).

DESCRIPTORS: Photography, *Photoconductive films, *Lithography, Printing.

Eastman, D. R.
NEW PHOTOLITHOGRAPHIC PROCESS. [1962] [8]p.
Order from OTS or SLA $1.10 62-18505

Trans. of Belgian patent 606,701, 28 July 61, by Kodak S. A. (U. S. appl. no. 45,948, 28 July 60

DESCRIPTORS: Photography, *Electrophotography, *Photoconductive films, *Lithography, Printing.

Fridkin, V. M.
PHYSICAL PRINCIPLES OF THE ELECTROPHOTOGRAPHIC PROCESS. [1962] 3p.
Order from ATS $6.25 ATS-91P62R

Trans. of Akad[emiya] Nauk SSSR. Vestnik, 1961, v. 31, no. 3, p. 111-113.
Another trans. is available from OTS or SLA $6.60 in 61-27395, JPRS-4778, 17 July 61 [67]p.

DESCRIPTORS: *Electrophotography, Photography.

Nesterovskaya, E. A. and Nechaeva, T. A.
THE PROBLEM OF THE ABSORPTION SPECTRUM OF PHOTOCHEMICALLY COLORED SILVER HALIDE WITH REFERENCE TO NATURE OF THE CENTERS FORMED IN IT. [1962] 6p.
Order from ATS $9.50 ATS-79P65R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 4, p. 252-256.

DESCRIPTORS: Silver compounds, Halides, Color centers, Photochemistry, Absorption spectrum, *Photographic chemicals.

Röhler, Rainer.
THE DEFINITION AND MEASUREMENT OF BLURRING IN THE X-RAY IMAGE. [1962] 15p. (figs. omitted) 3 refs.
Order from SLA $1.60 62-18292

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1958, v. 10, no. 1, p. 43-47.

DESCRIPTORS: *X-ray photography, *Photographic film, *Density, *X-rays, Dosage, Measurement, Statistical analysis, Images.

Measurement of blurring can be defined on the basis of the radiation dosage distribution on the film plane, not on the basis of the trend of density. A new definition for blurring, in analogy to the statistical square of variation with a correspondingly simple addition therein is proposed, and its relation to the usual definitions is studied. Different measurement methods for blurring are compared as regards accuracy and quantitative interpretation. The most theoretically clear method for the representation of sharp edges is too inaccurate for practical demands, and hence a quantitative relation has been developed to the method of representation with line gratings with the aid of the blurring definition proposed. (Author)

Romer, Witold.
COMPARISON STANDARDS FOR GRAININESS MEASUREMENTS. [1962] 6p. 9 refs.
Order from OTS or SLA $1.10 62-18878

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1962, v. 7, no. 2, p. 91-95.

DESCRIPTORS: *Photographic emulsions, Optical images, Visual acuity, Microphotometers, Illumination.

Sagura, J. J. and Van Allan, J. A.
PROCESS FOR THE ELECTROLYTIC RECORDING OF IMAGES. [1962] [26]p.
Order from OTS or SLA $2.60 62-18682

Trans. of Belgian patent 606,706 by Kodak S. A., publ. 28 July 61 (Priority: USA, 28 July 60, no. 45,954).

DESCRIPTORS: *Electrophotography, Lithography, Recording devices, Electrolytes, Ammonium compounds.

Treiber, E. and Schurz, J.
RADIOGRAPH REQUIREMENTS FOR QUANTITATIVE INVESTIGATIONS: CONTRIBUTION TO THE KNOWLEDGE OF THE NUMERICAL INTENSITY FILM CURVE IN EXPOSURES WITH X-RAYS AND OF THE CONDITIONS FOR THE DEVELOPING OF X-RAY FILMS, tr. by Bertha P. Klenova. 2 Oct 52 [12]p. 27 refs. TVA 3131.
Order from OTS or SLA $1.60 62-25800

Trans. of Angew[andte] Chem[ie] (West Germany) 1953, v. 65, p. 453-457.

DESCRIPTORS: *Radiography, Radiographic film, *X-ray photography, X rays, Intensity, *Photographic film, Density, Photographic processors, Photographic emulsions, Photographic chemicals, Antifogging agents, Electron microscopy, Quantitative analysis.

Radiographs for quantitative evaluation require X-ray negatives which are clear and rich in contrast. Other requirements include minimum background and fine grain. Strict proportionality between X-ray intensity and film density also is often required. The authors show that even with favorable negative material and har development the proportionality hardly exceeds approximately S = 1. They also show how far a "fine grain developing rich in contrast" and a reduction of the fog can be achieved by varying the composition of the developer. Further progress is to be expected from the manufacture of emulsions. (Author)

Urbach, F. and Nail, N. R.
PHOTOCONDUCTOGRAPHIC PROCESS. [1962] [7]p. 4 refs.
Order from OTS or SLA $1.10 62-18572

Trans. of Belgian patent 606,707, 28 July 61, by Kodak S. A. (U. S. application filed 28 July 60).

DESCRIPTORS: *Photoconductive films, Electrolytes, Color film, Colloids, *Photographic emulsions.

This invention describes a photoconductographic process in which an electric conductivity image is formed in a flexible photoconductive layer borne on a flexible conductor support. There is placed between the flexible layer and a second sheet having good electric conductivity, an electrolyte containing a product which forms the image and having a uniform viscosity between 20 and 3000 centipoises. The assembly is compressed enough to eliminate any air bubble and almost uniformly to create an electrolyte layer of uniform thickness. A current is passed along this image through the viscous electrolyte to deposit on the surface of the photoconductive layer a product forming the image, which is separated from the viscous electrolyte. The electrolyte frees hydrogen and leaves an alkaline product in the zones of the photoconductive layer through which the current has passed and the electrolyte which contains a color-former, forms a colorant in the presence of the alkaline product, so that the passage of the current forms a colorant image on the surface of the layer. (Author)

Urbach, F. and Nail, N. R.
PHOTOCONDUCTOGRAPHIC REPRODUCTION PROCESS USING AN ELECTROLYTE CONTAINING A COLLOID. [1962] [14]p.
Order from OTS or SLA $1.60 62-18573

Trans. of Belgian patent 606,708, 28 July 61, by Kodak S. A. (U. S. appl. filed 28 July 60).

DESCRIPTORS: *Photoconductive films, Photography, *Colloids, Separation, *Electrolytes.

This invention relates in particular to a process of photoconductographic reproduction, remarkable chiefly for the following characteristics, considered separately or in combination: An electric conductivity image is created in a photoconductive layer, there is electrolytically deposited on a receiving surface from an electrolyte and along this conductivity image, a product forming a dark image and a hydrophil colloid, then the receiving layer bearing the deposit of said product and the colloid, is separated from the electrolyte. The colloid is chosen among the following: gelatine, water-permeable starches and polyvinyl alcohol. The electrolyte contains a substance forming a colorant which, by electrolysis, forms this colorant, which is deposited on the receiving surface with the hydrophil colloid. (Author)

Plastics

INJECTION MOLDING MACHINE. 6 Nov 47, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18466

Trans. of German patent 469,994, 2 Jan 29, pat. from 4 Dec 27.

DESCRIPTORS: *Thermoplastics, *Molding, *Machines, Material forming, Injection.

INJECTION MOLDING MACHINE FOR PROCESSING THERMOPLASTIC MATERIALS. [1962] [7]p.
Order from OTS or SLA $1.10 62-18568

Trans. of Swiss patent 194,807, appl. 7 Mar 35, recorded 31 Dec 37, pub. 16 Mar 38, by Anubis AG.

DESCRIPTORS: Machines, *Molding. *Injection, *Thermoplastics, Processing.

INJECTION MOLDING MACHINE FOR THE WORKING UP OF GRANULAR OR PULVERULENT MATERIALS WHICH BECOME PLASTIC UNDER THE EFFECTS OF PRESSURE AND HEAT. 24 Jan 48, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18463

Trans. of German patent 485,362, 1 Nov 29, pat. from 2 Apr 26, by Eckert and Ziegler.

DESCRIPTORS: Injection, *Molding, *Machines, *Plastics, Pressure, Heat, Processing, Material forming.

Bischof, K.
THE MECHANOCHEMISTRY OF HIGH POLYMERS.
Jan 63 [11]p. 3 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Revista de Chimie (Rumania) 1962 [v. 13] no. 4, p. 205ff.

DESCRIPTORS: Polymers, Mechanical properties, Chemical properties, *Ball mills, Degradation, *Acrylic resins, *Acrylonitriles, *Vinyl plastics, Thermoplastic Chemical engineering.

Hahn, Wolf-Diether.
PROCESS AND APPARATUS FOR THE PRODUCTION OF FIBERS FROM THERMOPLASTIC SUBSTANCES.
[1962] 3p. (figs. omitted) 2 refs.
Order from OTS or SLA $1.10 62-18502

Trans. of German patent 1,118,924, appl. 24 Jan 59, issued 7 Dec 61, by Grunzweig & Hartman AG.

DESCRIPTORS: Production, *Fibers, *Thermoplastics, *Machines, *Processing, Glass, Minerals, Slags.

This invention describes a process and an apparatus for the production of fibers, especially ultrafine fibers, from substances which melt on heating or can be plasticized,especially mineral substances such as glass, slag, most of the different minerals. (Author)

Gergacsevics, Otto.
MACHINE FOR THE INJECTION MOLDING OF PLASTIC MATERIALS. 24 Jan 48, 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18464

Trans. of Germany patent 431,537, 13 July 26, pat. from 12 July 25.

DESCRIPTORS: *Machines, Injection, *Molding, Temperature, Pressure.

Heiner, H.
PLASTIC-COATED METAL. Jan 63.
Order from BISI £1 10s BISI-3079

Trans. of Kunststoffe-Plastics (Switzerland) 1962, v. 9, no. 1, p. 32-33.

DESCRIPTORS: *Plastic coatings, *Metals, Coatings, Production, *Corrosion inhibition, Mechanical properties, Metal-plastic adhesives.

Kroulikowski, W.
THE ACTION OF WATER ON THE LOAD-DEFORMATION DIAGRAM OF GLASS FIBRE REINFORCED POLYESTER RESINS. [1962] 1000 words, 12 refs.
Order from TTIS $9.00 TTIS NS 61

Trans. of Plaste und Kautschuk (Germany) 1962, v. 9 [no. 10] p. 495-496.

DESCRIPTORS: Plastics, *Polyester plastics, Reinforcing materials, Glass textiles, Water, Load distribution, Deformation.

Lee, Shoki and Hitomi, Kiyoshi.
INFLUENCE OF GLYCERIN AND ETHYLENE GLYCOL ON THE HEAT TREATMENT OF PVA FIBERS. [1962] [9]p. 4 refs.
Order from SLA $1.10 62-18940

Trans. of Kobunshi Kagaku (Japan) 1945, v. 2, p. 235-239.

DESCRIPTORS: *Glycerols, *Ethylenes, *Glycols, *Polymers, *Heat treatment, Synthetic fibers, Water, *Polyvinyl alcohol.

Lee, Shoki.
REPORT OF TAKATSUKI PILOT PLANT ON PVA FIBERS (GOSEI NO. 1). [1962] 35p.
Order from SLA $3.60 62-18939

Trans. of Kobunshi Kagaku (Japan) 1945, v. 2, p. 175-194.

DESCRIPTORS: *Industrial plants, *Polyvinyl alcohol, Polymers, Synthetic fibers, Production, Manufacturing methods, Heat treatment.

Märki, Emil.
MATERIAL FOR PRODUCTION OF DENTAL PROSTHETICS BY DEFORMATION UNDER PRESSURE AND HEAT. 27 Oct 52, 2p.
Order from OTS or SLA $1.10 62-18413

Trans. of Swiss patent 263,791, bl. 116 b (main patent) appl. 17 June 48, specification pub. 1 Dec 49, registered 15 Sep 49.

DESCRIPTORS: *Materials, *Dentures, Production, Deformation, Pressure, Heat, *Plastics, *Powder metals.

This invention deals with a material for the production of dental prosthetics, through deformation under pressure and heat. It represents a mixture of polymerizable synthetic resin powder and metal powder. Using this material, prosthetics may be made so that the mold containing the teeth is first filled with a polymerizable synthetic resin mixture so that the frontal portion of the denture is made entirely of this material, whereupon the mold is filled with a polymerizable synthetic resin-metal mixture (using the material according to the invention) and after the mold has been filled completely its contents are hardened under pressure and heat. (Author)

Mikhailov, N. V., Tokareva, I. G., and Kovaleva, M. V.
A STUDY OF THE MECHANISM OF AGEING IN SYNTHETIC FIBERS. I. A STUDY OF THE THERMAL AND THERMO-OXIDATIVE ACTION OF POLYAMIDES AND THEIR FIBRES (Issledovanie Mekhanizma Stareniya Sinteticheskikh Volokon. 1. Izuchenie Termicheskogo i Termookislitel'nogo Vozdeistviya na Poliamidy i Volokna iz Nikh). Nov 61 [10]p. 15 refs. T. I. L. /T. 5248; [DSIR] NLL M. 4794.
Order from OTS or SLA $1.10 63-13733

Trans. of Vysokomol[ekulyarnye] Soedineniya (USSR) 1960, v. 2, no. 4, p. 581-589.

DESCRIPTORS: *Synthetic fibers, Aging, Deterioration, Physical properties, Chemical properties, Temperature, Oxidation, Polymers, Amides, *Polyamide plastics.

Mochizuki, Takani.
CAUSES OF SELECTIVE UNIPLANAR ORIENTATION. Pt. 2 of X-ray Study of the Microstructure of PVA Film. [1962] [16]p. (fig. omitted) 16 refs.
Order from SLA $1.60 62-18944

Trans. of Nihon Kagaku Zasshi (Japan) 1959, v. 80 [no. 10] p. 1090-1094.

DESCRIPTORS: *X-ray diffraction analysis, *Polymers, *Vinyl alcohol, *Films, *Microstructure, X-ray absorption analysis, Thickness, Water, Heat treatment, Crystals.

Mochizuki, Takani.
SMALL ANGLE X-RAY SCATTERING OF PVA CONTAINING ADSORBED IODINE. [1962] 6p. 10 refs.
Order from SLA $1.10 62-18945

Trans. of Nihon Kagaku Zasshi (Japan) 1959, v. 80, p. 1369-1370.

DESCRIPTORS: *X-rays, *Scattering, *Polymers, Synthetic fibers, Iodine, X-ray diffraction analysis, *X-ray absorption analysis, *Polyvinyl alcohol.

Ohashi, K. and Hattori, K.
POLYMERIZATION INHIBITOR FOR VINYL MONOMERS. [1962] 2p.
Order from ATS $5.00 ATS-31P59J

Trans. of published Japanese patent 7,360/61, appl. date 11 July 57, pub. 12 June 61.

DESCRIPTORS: *Polymerization, Inhibition, *Vinyl radicals, Isomeric transitions.

Saechtling, Hansjürgen.
POLYVINYLCHLORIDE AND POLYETHYLENE: THE MOST IMPORTANT CORROSION-RESISTANT PLASTICS (Polyvinylchlorid und Polyäthylen: Die Wichtigsten Korrosionsbeständigen Kunststoffe). [1962] [9]p. (foreign text included) 7 refs.
Order from SLA $1.10 62-18249

Trans. of Chemie-Ingenieur-Technik (West Germany) 1955, v. 27, no. 10, p. 602-604.

DESCRIPTORS: *Polyvinyl chloride, *Polyethylene plastics, Plastics, *Corrosion inhibition, Physical properties, Chemical properties.

Polyvinylchloride and polyethylane represent very valuable materials for the chemical industry and also for the construction of pipe-lines because of the chemical resistance of these plastics and the favorable possibilities of working. The physical and chemical properties as well as the possibilities of working polyvinylchloride and high-pressure polyethylene and also, low-pressure polyethylene, are compared. (Author)

Thinius, K. and others.
THE BASIS FOR EVALUATING STABILISERS FOR POLYVINYL CHLORIDE. Pt. 8 of Contribution to the Study of Macromolecular Stability. [1962] 2500 words.
Order from TTIS $21.00

Trans. of Plaste und Kautschuk (Germany) 1962, v. 9 [no. 11] p. 516-519.

DESCRIPTORS: *Polyvinyl chloride, Acetates, Vinyl radicals, Stability, Plastics.

Yoshida, Y., Tsubakimoto, T. and others.
A METHOD OF STABILIZATION OF POLYACETAL. [1962] 8p.
Order from ATS $15.65 ATS-30P59J

Trans. of published Japanese patent 13,440/61, filed 23 Apr 59, pub. 15 Aug 61.

DESCRIPTORS: *Stabilization, Polymers, *Acetal plastics, *Plastics.

Zvonar, V.
THERMODYNAMIC CONDITIONS FOR PRODUCTION OF SELF-EXTINGUISHING PROPERTIES IN UNSATURATED POLYESTER RESINS. Jan 63 [8]p. 31 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Chemicky Prumysl (Czechoslovakia) 1962 [v. 12(37)] no. 6, p. 321ff.

DESCRIPTORS: *Polyester plastics, Combustion, Inhibition, Additives, *Antimony compounds, Oxides, *Phthalic acids, Thermodynamics, *Chemical engineering.

Rubber and Elastomers

Ceselli, C. A., Garlanda, T. and others.
cis-trans ISOMERIZATION OF POLYBUTADIENE.
Jan 63, 3200 words, 12 refs.
Order from CTS(Chem) $12.80 CTS(Chem)-317
subsequent copies $2.15/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 11, p. 1203-1211.

DESCRIPTORS: Polymers, *Elastomers, *Butadienes, Vulcanization, Molecular isomerism, Spectrum (Infrared), Sulfur, Elasticity.

Janu, M. and Kubicek, O.
MAGNETIC ELASTOMERS. Oct 62 [2]p.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Technicka Prace (Czechoslovakia) 1962, no. 3, p. 210ff.

DESCRIPTORS: *Magnetic materials, *Elastomers, Iron compounds, Oxides, Barium compounds, Carbonates, *Chemical engineering.

Kruse, J.
MICROSCOPIC MEASUREMENT OF PARTICLE SIZE IN RUBBER BLACKS. 23 Feb 50, 8p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18400

Trans. of Kolloid Z[ei]ts[chrift] (West Germany) 1948, v. 110 [no. 2] p. 125-132.

DESCRIPTORS: Microphotography, Measurement, *Particle size, *Pigments, *Rubber, Electron microscopy.

Wood and Paper

ELECTRICALLY CONDUCTING PAPER. [1962] 3p.
Order from OTS or SLA $1.10 62-18550

Trans. of French patent 867,323, appl. 27 Sep 40, granted 15 July 41, pub. 13 Oct 41 (pat. in U. S. A. 27 July 39, by Le Materiel Telephonique AG).

DESCRIPTORS: *Paper, Electrical conductance, *Recording paper.

SOME FACTS ABOUT FLONG. Feb 62 [1]p.
Order from SLA $1.10 62-16532

Abridged trans. of W[ochen]bl[att f\"ur] Papierfabr[ikation] (West Germany) 1962, v. 90, no. 2, p. 57-[58].

DESCRIPTORS: *Paper, *Molding materials, Manufacturing methods, Physical properties.

Karlitskii, Sh. M. and Komarovskii, L. E.
CONTINUOUS GRINDING OF WOOD PULP FOR CONDENSER PAPER. [1962] 7p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.10 62-18875

Trans. of Bumazhn[aya] Promyshlennost' (USSR) 1961, v. 36, no. 12, p. 12-14.

DESCRIPTORS: Manufacturing methods, *Paper, *Wood pulp, Grinders, Capacitors.

The results of these tests proved the possibility of obtaining a quality condenser paper, 10 microns thick, from the wood pulp, ground only in cone grinders in continuous operation. It has been found that the application of cone grinders with basalt trimmings is economically more expedient than the use of rollers for the same purpose. (Author)

Milov, B. G., Vitovtova, M. I. and Strunnikov, N. A.
ZELLSTOFFKOCHUNG FUER DUENNES KONDENSATORPAPIER (Boiling of Cellulose of Thin Condenser Paper). 3p. (text in German).
Order from TIB $0.95.

Trans. of Bumazhnaya Promyshlennost'(USSR) 1962, v. 37, no. 1, p. 17-19.
Another trans. is available in English from OTS or SLA $2.60 as 63-13110, JPRS-14398, 6 July 62 [24]p.

DESCRIPTORS: *Cellulose, *Filter paper, *Boiling, Paper capacitors.

Pfister, E.
ELECTRICAL DRYING OF WOOD. [1959] 6p. (figs. omitted).
Order from SLA $1.10 60-14437

Trans. of Schweizer Elektro-Rundschau [sic] 1936, v. 28 [no. 7] p. 45-48.

DESCRIPTORS: *Wood, Driers (Apparatus), Electrical equipment.

MATHEMATICS

Natanson, I. [P.].
SUMMATION OF INFINITESIMAL QUANTITIES.
Russian Tracts on Advanced Mathematics and Physics, vol. 9. 1961, 66p.
Order from GB $4.50

Trans. of mono. [Summirovanie Beskonechno Malykh Velichin] Leningrad, n. d.

DESCRIPTORS: *Series, *Integration, Algebra, Hydrostatic pressure, Hydraulic research, *Geometric forms, Volume, Parabolic bodies, Fourier analysis, Calculus.

Sarmanov, O. V. and Vistelyus, A. B.
ON CORRELATION AMONG PERCENTAGE QUANTITIES. [1962] 7p. 3 refs.
Order from OTS or SLA $1.10 62-16442

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 126 [no. 1] p. 22-25.

DESCRIPTORS: *Correlation techniques, *Statistical functions, Statistical analysis.

Two cases are pointed out, in which, working with percentage quantities obtained from observations, one can determine the true coefficient of correlation between the original quantities, which are un-observable. (Author)

Stepan'yants, G. A.
THE STUDY OF CORRELATED RANDOM VALUES. 13 Nov 62 [8]p. 2 refs. FTD-TT-62-1191.
Order from OTS or SLA $1.10 63-13903

Unedited rough draft trans. of [Aviatsionnyi Institut, Moscow. Trudy] (USSR) 1961, v. 139, p. 129-133.

DESCRIPTORS: *Correlation techniques, *Statistical functions, Numbers, Probability, Parity.

The parity coefficient γ_{XY} and the parity function $\gamma_X(\tau)$ can be used to describe the relationship between two random values X and Y, and also for studying the nature of a random process. The parity coefficient has a mutual one-to-one relationship with the correlation coefficient, and the parity function with the normalized correlation function, for a wide class of processes (particularly Gaussian). The devices for calculating the parity function do not contain multipliers, and, therefore, are considerably more simple and reliable than devices for calculating correlation functions. In view of this, in many cases it is advantageous to use the parity function and the parity coefficient instead of correlation functions and correlation coefficients. (Author)

Vainberg, M. M.
ON DIFFERENTIALS AND GRADIENTS OF FUNCTIONALS, tr. by H. P. Kramer. June 53, 7p. 7 refs.
Order from OTS or SLA $1.10 UCRL-Trans 170

Trans. from Uspekhi Matemat[icheskikh] Nauk (USSR) 1952, v. 7, no. 3[49].

DESCRIPTORS: *Functional analysis, *Differential equations, Operators (Mathematics), Topology.

In this note, the linear Gâteaux differential is investigated and conditions are presented that are sufficient to assure the equality of the linear Gâteaux differential to the Fréchet differential. This investigation permits the introduction of the concept of the gradient of a functional arising not from the Fréchet differential but from the linear Gâteaux differential. This represents an advantage since the linear Gâteaux differential may exist even though the Fréchet differential does not. Besides this, the proof of the existence and calculation of the former is easier than the proof of the existence and calculation of the latter. (Even in the case that both coincide). (Author)

Vainberg, M. M.
ON SOME VARIATIONAL PRINCIPLES IN THE THEORY OF OPERATIONAL EQUATIONS, tr. by H. P. Kramer. June 53, 6p. 7 refs.
Order from OTS or SLA $1.10 UCRL Trans-169

Trans. from Uspekhi Matem[aticheskikh] Nauk (USSR) 1952, v. 7, no. 2(48).

DESCRIPTORS: *Functional analysis, *Differential equations, *Operators (Mathematics), Calculus of variations, Topology.

Yaglom, A. M.
EFFECTIVE SOLUTION OF LINEAR APPROXIMATION PROBLEMS FOR PROCESSES WITH RANDOM, STATIONARY n-th INCREMENTS [Effektivnye Resheniya Lineinykh Approksimatsionnykh Zadach dlya Protsessov so Sluchainymi Statsionarnymi n-mi Prirashcheniyami]. [1961] 6p. 10 refs. MDF 1-102.
Order from OTS or SLA $1.10 62-19906

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 98, no. 2, p. 189-192.

DESCRIPTORS: *Mathematical prediction, Equations, Polynomials, Functions.

Computing Devices

Bukreev, I. N., Chavchanidze, V. V. and others.
A DEVICE FOR DISTINGUISHING NUMBERS BY ABSOLUTE VALUE. 18 Sep 62 [5]p. FTD-TT-62-1123.
Order from OTS or SLA $1.10 62-33548

Unedited rough draft trans. of Russian patent 139,150 (660616/26) 29 Mar 60.

DESCRIPTORS: *Digital computers, Computers, Numbers, Arithmetic operations, Trigger circuits.

The device for distinguishing numbers by absolute value in a summator according to Patent No. 124203 is distinguished by the fact that, in order to increase speed of operation and to obtain the result of the comparison of numbers by absolute value simultaneously with the performance of an operation, a line of determination of the absolute value is used, which consists of a sequence of series-connected coincidence circuits and collector circuits corresponding to a given digit. One of the inputs of each collector circuit is conneeted to the output of a coincidence circuit of a given digit, and the second, to the output of the "01" circuit of the summator. The first input of the coincidence circuit is connected to the output of the collector circuit of the previous digit, and the second input, to the output of the "00" or "11" collector circuit of the summator. (Author)

Kartsev, M. A.
AUTOMATION OF CALCULATIONS AND THE DEVELOPMENT OF COMPUTER ENGINEERING.
29 Jan 63, 9p. JPRS: 17355.
Order from OTS $0.50 63-2101

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 11, p. 64-69

DESCRIPTORS: *Digital computers, Computers, Automatic, *Programming (Computers), Computer logic, Memory devices, Engineering.

Popov, Yu. A.
A METHOD OF CONSTRUCTING A LINEAR FERRITE MEMORY DEVICE AND A DEVICE FOR IMPLEMENTING THE METHOD. 20 Nov 62 [5]p.
FTD-TT-62-1362.
Order from OTS or SLA $1.10 63-13887

Unedited rough draft trans. of Soviet patent 140267 (682945/26) 22 Oct [60].

DESCRIPTORS: Ferrites, *Memory devices, *Ferrite cores, *Computer storage devices, Magnetic cores, Construction, Coding, Amplifiers.

A method of constructing a linear ferrite memory device is described. For the purpose of reducing the power of the current shapers, the number being stored, which is expressed in a binary code, is converted into a quaternary code used for storage, and is converted back into the binary code during readout. A device for implementing the method is described. In order to reduce the number of elements, a single core is used for each value of quaternary information, (two digits of a binary number).

MECHANICS

CONTRIBUTION TO THE STUDY OF LUBRICATED FRICTION, PTS. I (SECTS. 1-4, 6)-II. [1962] [78]p. (foreign text included).
Order from SLA $7.60 62-18751

Trans. of Revue de l'Institut Français du Pétrole [et Annales des Combustibles Liquides] (France) 1957, v. 12, no. 9, p. 956-969, 971-983.

DESCRIPTORS: *Friction, *Lubrication, *Lubricants, *Viscosity, Bearings, Ball bearings, Load distribution, Hydrodynamics, Temperature, Stability, Internal combustion engines, Numerical analysis, Differential equations.

Contents:
Description of the apparatus
Experiments under hydrodynamic working conditions
Study of the variations of the coefficient of friction under semi-fluid working conditions with a stable thermal equilibrium
Study of the conditions of stability of the temperatures
Interpretation of the results of the experiments with the bearing
Study of the influence of the viscosity of a lubricant upon the mechanical efficiency of an internal combustion engine.

ELASTIC ACTUATOR HAVING CONSTANT FREQUENCY OR CONSTANT DEFLECTION. 25 July 1962. 6p. (foreign text included). 4015/55 Japan.
Order from INT $21.00

Trans. of Japanese patent 4015/55 by Metal Materials Research Laboratory, Japan, filed 23 Jan 54.

DESCRIPTORS: *Servomechanisms, Frequency, Deflection, Elasticity.

Anchev, A.
THE STABILITY OF THE PERMANENT ROTATIONS OF A HEAVY GYROSTAT. 4 Apr 62 [11]p. 5 refs.
FTD-TT-62-540.
Order from OTS or SLA $1.60 62-25408

Unedited rough draft trans. of #Prikladnaya Matematika i Mekhanika (USSR) 1962, v. 26, no. 1, p. 22-28.

DESCRIPTORS: *Gyroscopes, Rotation, Stability, Inertia, Mechanics.

Certain sufficient conditions are given of the stability of permanent rotations of a heavy gyrostat with arbitrary gyrostat mass-distribution, and we indicate the regions of stability on the cone of the permanent axes. (Author)

Bugakov, I. I.
INVESTIGATION ON PHOTOPLASTICITY. 5 June 62, 2p. AID rept. 62-74; AD-284 481.
Order from OTS or SLA $1.10 62-25768

Abstract trans. of mono. Issledovaniya po Uprugosti i Plastichnosti: Sbornik (Investigations on Elasticity and Plasticity: Collection of Articles) no. 1, Leningrad U., 1961, p. 107-126.

DESCRIPTORS: *Photoelasticity, *Plasticity, Deformation, Theory.

Kokorev, L. S. and Ryaposov, V. N.
TURBULENT HEAT TRANSFER DURING THE FLOW OF A HEATING MEDIUM OF SMALL PRANDTL NUMBER ALONG A TUBE. Oct 62 [6]p. 22 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Zhurn[al] Priklad[noi] Mekh[aniki] i Tekh[nicheskoi] Fiz[iki] (USSR) 1962, no. 2, p. 42ff.

DESCRIPTORS: *Heat transfer, *Heat exchangers, Liquid metals, *Mercury, Turbulent flow, Thermal conductivity, Pipes, *Chemical engineering.

Koshmarov, Yu. A.
HYDRODYNAMICS AND HEAT TRANSFER IN A TURBULENT INCOMPRESSIBLE FLUID STREAM IN THE GAP BETWEEN ROTATING COAXIAL CYLINDERS. Oct 62 [5]p. 8 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 5, p. 5-14.

DESCRIPTORS: *Hydrodynamics, *Heat transfer, *Turbulent flow, Fluid flow, Cylinders, Rotation, *Chemical engineering.

Kosterin, S. I., Koshmarov, Yu. A., and Finat'ev, Yu. P.
AN EXPERIMENTAL INVESTIGATION OF THE HYDRO DYNAMICS OF A TURBULENT AIR STREAM IN A GAP BETWEEN ROTATING COAXIAL CYLINDERS. Oct 62 [4]p. 6 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 5, p. 15ff.

DESCRIPTORS: *Hydrodynamics, *Heat transfer, *Turbulent flow, Air, Fluid flow, Cylinders, Rotation, *Chemical engineering.

Kröner, Ekkehart.
GENERAL CONTINUUM THEORY OF DISLOCATIONS AND INTERNAL STRESSES, I-II (Allgemeine Kontinuumetheorie der Versetzungen und Eigenspannungen). [1962] [85]p.
Available on loan from SLA 63-10151

Trans. of thesis Technische Hochschule, Stuttgart (West Germany) n.d. (Arch. Rational Mech. Anal., v. 4

DESCRIPTORS: *Continuum mechanics, Nonlinear systems, Dislocations, Stresses, Elasticity, Geometry, Differential geometry, Statics.

This work is both a review of the present-day situation of the general nonlinear continuum theory of stationary dislocations and internal stresses and a presentation of new results in that field. (Author)

Kuznetsov, N. I. and Khalimanovich, M. P.
EFFECT OF IMPRECISIONS IN THE MAKING OF A SYMMETRICAL GYROSCOPE ON ITS MOTION. 13 Sep 62 [7]p. 4 refs. FTD-TT-62-1158.
Order from OTS or SLA $1.10 62-33551

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1959 [v. 2] no. 8, p. 112-115.

DESCRIPTORS: *Gyroscopes, Design, Motion, Inertia, Rotation, Gravity.

An examination is made of the character of the motion of the gyroscope at low angles of nutation.

Leonov, M. Ya.
ELEMENTS OF THE THEORY OF BRITTLE FRACTURE (Elementy Teorii Khrupkogo Razrusheniya). [1962] 20p. 12 refs.
Order from OTS or SLA $1.60 62-18823

Trans. of [Zhurnal] Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 3, p. 85-92.

DESCRIPTORS: *Fracture (Mechanics), Elasticity, Load distribution, Mathematical analysis, *Rupture, Stresses, Brittle materials.

Lifshits, I. M.
CONCERNING THE HEAT-CAPACITY OF THIN FILMS AND NEEDLES AT LOW TEMPERATURES (O Teploemkostyakh Tonkikh Plenok i Igl pri Nizkikh Temperaturakh). [1962] [9]p. (foreign text included) 4 refs.
Order from OTS or SLA $1.10 62-18124

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1952, v. 22, no. 4, p. 471-474.

DESCRIPTORS: *Thin films, Temperature, Mechanical waves, Vibration.

Pokrovskii, G. I. and Fedorov, I. S.
ACTION OF SHOCK AND EXPLOSION IN DEFORMABLE MEDIA, tr. by S. Shewchuck. 1961 [420]p. 39 refs.
Order from OTS or SLA $22.25 UCRL Trans-777 (L)

Trans. of mono. Deistvie Udara i Vzryva v Deformiruem'ikh Sredakh, Moscow, 1957.

DESCRIPTORS: *Shock waves, *Explosions, *Explosion effects, Mechanical waves, Elasticity, Deformation, Geophysics, Rock (Geology), Fracture (Mechanics), Structures, Materials, Demolitions.

The book examines a series of phenomena which occur during explosion and the physical bases of its action in ground and rock; formulas for computing the different parameters of explosion are given; principles of similarity and methods of modelizing shock and explosion are set forth; and a description is given for modelizing the effects of shock and explosion in ground, rocks, and structural material. The book is calculated for scientific workers and engineers who are concerned with various areas of construction, mining and explosive enterprises. (Author)

Rointenberg, L. Ya. and Kharmalov, S. A.
GYROSCOPIC TRACKING SYSTEMS IN THE PRESENCE OF MULTIDIMENSIONAL RANDOM INTERFERENCE [AND] THE MOTION OF A GYROSCOPE MOUNTED IN A BALL BEARING GIMBAL. 18 Sep 62 [32]p. 11 refs. FTD-TT-62-1116. AD-286 633
Order from OTS or SLA $3.60 62-33545

Unedited rough draft trans. of #Prikladnaya Matematika i Mekhanika (USSR) 1962, v. 26, no. 2, p. 247-258 and 365-369.

DESCRIPTORS: *Gyroscopes, *Tracking, Interference, Perturbation theory, Statistical processes, Functions, *Gimbals, Motion, Equations of motion, Inertia, Gyro stabilizers, Ball bearings.

Slomyanskii, G. A.
CALCULATION OF FACTORS AFFECTING THE ACCURACY IN DETERMINING THE DRIFT OF FLOATING INTEGRATING GYROSCOPES. 29 Oct 62 [15]p. 1 refs. FTD-TT-62-1231.
Order from OTS or SLA $1.60 63-13879

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 2, p. 61-69.

DESCRIPTORS: *Gyroscopes, Drift, Test methods, Test equipment, Errors, Mathematical analysis, Equations of motion, Rotation.

Soloukhin, R. I.
DETONATION OF ACETYLENE. [1962] 5p. 5 refs.
Order from OTS or SLA AEC-tr-5036

Trans. of Zhurnal Prikladnoi Mekhanika i Tekhnicheskoi Fiziki (USSR) 1960, no. 1, p. 18-20.

DESCRIPTORS: *Acetylenes, Decomposition, *Detonation, *Shock waves, Wave transmission, Dynamics, Chemical reactions.

This paper discusses the characteristics of the propagation of shock waves occurring in the cracking of acetylene. The conditions under which they arise have been determined, as well as some features of the reaction that initiates the shock wave. The structure of the detonation waves is considered. (Author)

Volkov, S. D.
STATISTICAL STRENGTH THEORY. 1962, 278p.
Order from GB $11.50

Trans. of mono. [Statisticheskaya Teoriya Prochnosti, Moscow, 1960, 176p.].

DESCRIPTORS: *Statistical mechanics, Theory, Machines, Design.

Aerodynamics and Pneumatics

Alimov, R. Z.
HEAT AND MASS EXCHANGE WITH COOLING OF STRONGLY HEATED SURFACES BY EVAPORATION (Teplo-i Massobmen pri Okhlazhdenni Sil'no Nagrevaemykh Poverkhnostei is Pareniem) tr. by Joy B. Gazley. Nov 62 [21]p. 16 refs. Rand Memo. RM-2997-PR.
Order from OTS or SLA $2.60 63-13622

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 5, p. 31-39.

DESCRIPTORS: *Heat transfer, *Mass transfer, Surfaces, Cooling, Evaporation, Thermal conductivity, Thermal diffusion, *Fluid flow, Fluid dynamics.

In this article criterial equations of heat and mass transfer are deduced, which take into account the intereffect of the flows of heat and steam across the boundary layer and the effects of Stefan's flow on the values of the coefficients of thermal conductivity and diffusion. The temperature and liquid flow rate, determined by the aid of these equations, are compared with experimental and theoretical data given by other authors. (Author)

Bois, G[eorges]du and Rouge, C[harles].
ON A METHOD OF MEASURING THE BASE PRESSURE. [1962] 7p.
Order from SLA $1.10 62-18647

Trans. of la Recherche Aéronautique (France) 1960, no. 79, p. 36-37.

DESCRIPTORS: *Aerodynamics, Hypersonic flow, Shock waves, *Pressure, *Aerodynamic configurations, Wake, Turbulent flow, *Manometers, Model tests, Wind tunnels.

Chushkin, P. I. and Shulishnina, N. P.
SUPERSONIC FLOW AROUND BLUNT CONES: TABLES [1962] 46p. 8 refs.
Order from MDF $9.50

Trans. of mono. Tablitsy Sverkhzvukovogo Techeniya Okolo Zatuplennykh Konusov, Moscow, 1961.

DESCRIPTORS: *Blunt bodies, Conical bodies, Aerodynamic configurations, Supersonics, *Supersonic flow, *Tables.

Grodzovskii, G. L.
CERTAIN PECULIARITIES OF THE FLOW AROUND BODIES AT HIGH SUPERSONIC VELOCITIES. [1961] 11p. 15 refs. MDF G-140.
Order from OTS or SLA $1.60 63-13729

Trans. of A[kademiya] N[auk] SSSR. Otd[elenie] Tekh[nicheskikh] Nauk. Izvestiya, 1957, no. 6, p. 86-92.

DESCRIPTORS: *Supersonic flow, Drag, Pressures, Shock waves, Mach number, Aerodynamic configurations.

Certain peculiarities of the flow around bodies at high supersonic speeds are noted in this work, which permit the investigation of the flow around bodies at high M numbers to be simplified considerably in the first approximation and permit a number of variational problems to be considered. (Author)

Kiselev, A. A.
ON THE UNSTEADY FLOW OF A VISCOUS FLUID WITH EXTERNAL FORCES [O Nestatsionarnom Techenii Vyazkoi Zhidkosti pri Nalichii Vneshnikh Sil]. [1961] 6p. 5 refs. MDF K-121.
Order from OTS orSLA $1.10 62-23161

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 100, no. 5, p. 871-874.

DESCRIPTORS: *Fluid flow, Viscosity, Cylindrical bodies, Boundary layer.

A method is presented of solving the boundary problem in the cylinder $Q = \Omega \times [0 \leq t \leq T]$ where Ω is a region of bounded variation of (x_1, x_2) and T is a positive constant dependent on Ω, the initial conditions and the mass forces acting on the fluid. If the mass forces have a potential and the initial perturbation is not large, then $T = \infty$ and the solution as $t \to \infty$ approaches zero uniformly in (x_1, x_2). (Author)

Kosterin, S. I., Koshmarov, Yu. A., and Osipov, Yu. V.
INVESTIGATING FLOW AND HEAT TRANSFER OF A RAREFIED GAS IN A FLAT SUPERSONIC NOZZLE. 5 Oct 62 [12]p. 17 refs. FTD-TT-62-1279; AD-287 666.
Order from OTS or SLA $1.60 63-13208

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 4, p. 3-9.

DESCRIPTORS: *Superaerodynamics, *Heat transfer, *Supersonic nozzles, Nozzles, Fluid mechanics.

Kosterin, S. I., Koshmarov, Yu. A., and Osipov, Yu. V.
AN INVESTIGATION OF FLOW AND HEAT TRANSFER IN A RARIFIED GAS IN A FLAT NOZZLE. Oct 62 [5]p. 17 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 4, p. 3-[9].
An unedited rough draft trans. is available from OTS or SLA $1.60 as 63-13208, FTD-TT-62-1279, 5 Oct 62 [12]p.

DESCRIPTORS: *Supersonic nozzles, Gas flow, *Heat transfer, Velocity, Pressure, Temperature, *Chemical engineering.

Matyazh, A. I.
AN EXPERIMENTAL STUDY OF THE EFFICIENCY OF VARIOUS METHODS OF BLOWING A HORIZONTAL STREAM OF GAS OVER AN AEROFOIL SECTION FITTED WITH A FLAP (Eksperimental'noe Issledovanie Effektivnosti Nekotorykh Variantov Vyduva Ploski Strui Gaza na Profile s Zakrylkom). May 62 [14]p. 4 refs. RTS 2076.
Order from OTS or SLA $1.60 62-25456

Trans. of article from an unidentified issue of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Aviatsionnaya Tekhnika (USSR).

DESCRIPTORS: Aerodynamic configurations, *Airfoils, *Slotted flaps, Flaps, *Aerodynamics, Jets, Wings.

The blowing of a horizontal stream of gas over a wing section fitted with a slotted flap produces an improvement in the lift producing capacity of such a wing section. The greatest increase of lift coefficient through out the whole range of angles of attack is produced in the case where air blows on to the flap, which leads to an increase in the efficiency of the slotted flap up to an angle of deflection of 50°; to a displacement of the curve $C_y = f(\alpha)$ upwards and to the left with a simultaneous increase of $C_{y_{max}}$, $\frac{dC_y}{d\alpha}$, the magnitude of α_o and the pitching moment. The stream, blown from the flap, acts on the external airstream flowing past the wing section and is effective from the point of view of an increase of $C_{y_{max}}$ at flap angles of deflection where there is no apparent breakaway of the airstream flowing past the wing section ($\delta = 0$; 25°). The increase in the lift coefficient of a wing section fitted with a mechanical flap over which air is blown is proportional to the jet momentum coefficient and in the linear section of the curve $C_y = f(\alpha)$ does not depend on the width of the nozzle aperture. As the Reynolds number of the free stream increases, the dimension of the nozzle aperture has an influence on the size of the angle of attack giving maximum lift.

Mezhirov, I. I.
CALCULATION OF UNIDIRECTIONAL GAS FLOW IN A CHANNEL OF VARYING CROSS SECTIONAL AREA INCLUDING THE EFFECT OF FRICTION AND HEAT EXCHANGE. Jan 63 [3]p. 2 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Zhurn[al] Priklad[noi] Mekh[aniki] i Tekh[nicheskoi] Fiz[iki] (USSR) 1962, no. 3, p. 92ff.

DESCRIPTORS: *Gas flow, *Heat transfer, Friction, Mach number, *Chemical engineering.

Pomerantsev, A. A.
HEAT EXCHANGE WITH A FLOW OF A RAREFIED GAS ALONG A WALL (Teploobmen Obtekkaniem Razrezhennogo Gaza so Stenkol) tr. by Joy B. Gazley. Nov 62 [24]p. 13 refs. Rand Memo RM-3016-PR.
Order from OTS or SLA $2.60 63-13621

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 5, p. 3-11.

DESCRIPTORS: *Heat transfer, Gas flow, *Supersonic flow, Hydrodynamics, Thermodynamics, Boundry layer.

The Blasius-Rubesin method is generalized for the case of supersonic movement of a body in a rarefied gas in the presence of slip. A solution is obtained for the flow of gas round a wall. A conclusion is deduced for hydrodynamic and thermal boundary conditions corresponding to the problem. (Author)

Rumynskii, A. N.
THE EFFECT OF DIFFUSION OF A RADIATING ADDITIVE ON CONVECTIVE HEAT TRANSFER. Oct 62 [6]p. 18 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Zhurn[al] Priklad[noi] Mekh[aniki] i Tekh[nicheskoi] Fiz[iki] (USSR) 1962, no. 2, p. 50-58.

DESCRIPTORS: *Gas flow, Blunt bodies, *Heat transfer, Additives, Gases, Diffusion, Thermal conductivity, *Chemical engineering.

Sekerzh-Zen'kovich, Ya. N.
SYMMETRICAL OSCILLATIONS OF TWO LIQUID LAYERS ON A SPHERE, ROTATING WITH DIFFERENT ANGULAR VELOCITIES, tr. by M. Yanowitch. 15 Nov 61 [31]p. 4 refs. AGM Rept. no. 102.
Order from OTS or SLA $3.60 62-23560

Trans. of [Akademiya Nauk SSSR]. Morskii Gidrofizicheskii Institut. Trudy, 1959, v. 18, p. 94-113.

DESCRIPTORS: *Spheres, Bodies of revolution, Rotation Liquids, Oscillation, *Fluid mechanics, Vibration, Hydrostatic pressure, Equations of motion, Transformations (Mathematics), Aerodynamics.

An analysis is made of the free symmetrical oscillations of a liquid which covers a rigid sphere and consists of two layers of different density, rotating with different angular velocities. This model allows one to take into account approximately the effect of nonhomogeneity in the densities and angular velocities in the investigation of long internal atmospheric waves. (Author)

Shanknov, I. F. and Frost, V. A.
THE FLOW OF A SUPERSONIC IDEAL GAS PAST A FLAT PLATE IN THE PRESENCE OF VOLUME HEAT RELEASE. 19 Sep 62 [19]p. 7 refs. FTD-TT-62-1049; AD-287 708.
Order from OTS or SLA $1.60 63-13219

Unedited rough draft trans. of Fiziko-Tekhnicheskii Institut, Moscow. Trudy (USSR) 1961, v. 7, p. 110-123

DESCRIPTORS: *Gases, *Supersonic flow, *Heat transfer, *Sheets, Pressure, Compression shock, Density, Thermodynamics, Dynamics.

The classical method of characteristics and the method of linearization of equations are altered in order to calculate the supersonic flow of an ideal gas in the presence of volume heat transfer. A comparison is made of the results of calculation by both methods for the case o flow past a flat wall when the heat is supplied to the stream in a rectangular zone. It follows from the results of the calculation that for nonadiabatic flow past the determining quantity is not the total amount of heat supplied but the intensity of the supply, i.e., the strength of the heat sources $\underline{c}$. The assumption concerning the potentiality of the flow is quite justified for the problem by an unperturbed supersonic flow past a flat plate in the presence of a rectangular zone of heat supply. At small values of heat source strength linearized theory gives quite satisfactory results ($c \ll 0.01 \cdot 10^7$).

Tournier, M. and Laurenceau, P.
MAGNETIC SUSPENSION OF A MODEL IN WIND-TUNNEL. [1962] 19p.
Order from SLA $1.60 62-18648

Trans. of la Recherche Aeronautique (France) 1957, no. 59, p. 21-26.

DESCRIPTORS: *Suspension devices, *Electromagnets, Bodies of revolution, Aerodynamic configurations, Model tests, Wind tunnels.

Weinig, Fritz.
AERODYNAMICS OF THE PROPELLER, REV ED. [1947] [1019p.] 296 refs. F-TR-1157-ND: ATI-10 825.
Order from OTS or SLA $36.00 63-15310

Trans. of mono. Aerodynamik der Luftschraube, rev. ed., Berlin, July 47.

DESCRIPTORS: *Aerial propellers, Aerodynamics, *Propeller blades, Aerodynamic characteristics, Geometry, Pitch (Motion), Weight, Inertia, Power, Velocity, Test methods, *Fluid dynamics, Compressible flow, Viscosity, Friction, Drag, Lift, Thrust, Downwash, Boundry layer, *Diffusers, Loading (Mechanics), *Aircraft, Motion, Airframes, Control surfaces.

The publication is divided into four parts. Part I contains general remarks on the propeller; chapters on the geometry of the propeller; principles for propeller tests and their evaluation. Part II discusses investigations of the propeller element; the relation between efficiency and power; relation between pitch, blade-width ratio and power; effect of a diffuser; irregularity effects. Part III considers the behavior of the entire propeller. Part IV treats the effect of the propeller on the airplane. An extensive compilation of propeller tests and a bibliography are contained in the appendix.

Yur'ev, L.
FLIGHT: EXPLOSION. 2 Nov 62 [19]p. FTD-TT-62-98.
Order from OTS or SLA $1.60 63-13881

Unedited rough draft trans. of Nauka i Zhizn' (USSR) 1961 [v. 28] no. 5, p. 17-22.

DESCRIPTORS: Aerodynamics, *Hypersonic flow, Aerodynamic configurations, *Blunt bodies, *Shock waves, Aircraft, Design.

Professor G. G. Chernyy solved a series of very interesting and important problems concerning the effect of the geometrical shape of a body on the resistance to its motion. An essentially new law of similarity for hypersonic flow around slightly blunted bodies was discovered. This law permits a significant reduction in the number of costly and complex experiments and so has tremendous practical significance. (Author)

Hydrodynamics, Hydraulics, and Hydrostatics

Dul'nev, V. B.
DETERMINATION OF HEAD LOSS IN TRASHRACKS (Opredelenie Poter' Napora v Reshetkakh) tr. by June Stevens. July 60 [14]p. (foreign text included) 4 refs. Bureau of Reclamation Trans. 376.
Order from OTS or SLA $1.60 62-25127

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1956 [v. 25] no. 9, p. 51-53.

DESCRIPTORS: *Hydroelectric power systems, Hydraulic systems, Fluid flow, Reduction, *Hydraulic fluid filters.

A specific case shows that existing formulas do not take into account a number of important factors which greatly influence hydraulic losses through trashracks. Because of these factors and the peculiarities of the trashrack construction, it is necessary to rake the trashracks during summer and fall periods. (Author)

Kaganov, S. A.
ESTABLISHING LAMINAR FLOW FOR AN INCOMPRESSIBLE LIQUID IN A HORIZONTAL CHANNEL AND A CURVED CYLINDRICAL TUBE WITH CORRECTIONS FOR FRICTIONAL HEAT AND THE TEMPERATURE DEPENDENCE OF VISCOSITY. Jan 63 [3]p. 11 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Zhurn[al] Priklad[noi] Mekh[aniki] i Tekh-[nicheskoi] Fiz[iki] (USSR) 1962, no. 3, p. 96ff.

DESCRIPTORS: *Fluid flow, Pipes, Friction, Viscosity, Heat, Temperature, Hydrodynamics, *Chemical engineering.

Novikov, A. G.
THE PROBLEM OF DETERMINING HEAD LOSSES IN TRASHRACKS (K Voprosu Opredeleniya Poter' Napora na Reshetkakh) tr. by June Stevens. July 60 [10]p. (foreign text included). Bureau of Reclamation Trans. 377.
Order from OTS or SLA $1.10 62-25134

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1957 [v. 26] no. 10, p. 50-51.

DESCRIPTORS: *Hydroelectric power systems, Turbines, Hydraulic systems, Fluid flow, Reduction, *Hydraulic fluid filters.

Two tables are given showing the experience of actual operation of flood gates, trashracks, and devices for cleaning trashracks of hydroelectric plants. The tables reveal the unsuitability of the formulas of the All-Union Scientific Research Institute and Kirshmera for calculating head losses in trashracks.

Polubarinova-Kochina, P. Ya.
THEORY OF GROUND WATER MOVEMENT, tr. by J. M. Roger de Wiest. Oct 62, 613p. 312 refs.
Order from Princeton U. Press, N. J. $10.00

Trans. of mono. [Teoriya Dvizheniya Gruntovikh Vod] Moscow, 1952.
A partial trans. (p. 618-639) is available from OTS or SLA $3.60 as 61-20419 [1961] [34]p.

DESCRIPTORS: *Hydrology, Water, Fluid flow, Theory, *Hydrodynamics, Drainage, Soils, Mechanical properties Hydraulic systems, Dams, Hydraulic reservoirs, *Applied mathematics, Equations of motion, Functional analysis, Functions, Differential equations, Numerical methods and procedures, Inertia.

Smirnov, V. I. and Nevzglyadov, V. G.
TURBULENT FLOW IN CIRCULAR TUBES. [1962] [35]p. 7 refs.
Order from OTS or SLA $3.60 AEC-tr-5214

Trans. of Akad[emiya] Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1945, no. 9, p. 857-874.

DESCRIPTORS: *Fluid dynamics, Fluid flow, *Turbulent flow, Theory, Pipes, Differential equations, Statistical analysis.

This paper, which is a theoretical investigation of the steady flow of an incompressible viscous fluid (assumed to be approximately isothermic) through a straight tube of circular cross section with smooth walls, presents the theoretical derivation of the profile of average velocities and other characteristics of turbulent flow.

Stepochkin, B. F.
A TWO-TERM EQUATION FOR THE RESISTANCE OF POROUS MEDIA. Jan 63 [4]p. 13 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Zhurn[al] Priklad[noi] Mekh[aniki] i Tekh-[nicheskoi] Fiz[iki] (USSR) 1962, no. 3, p. 117ff.

DESCRIPTORS: *Porous materials, Fluid flow, Resistance, Equations, *Chemical engineering.

METALLURGY

ALLOYS FOR ANISOTROPIC PERMANENT MAGNET. 4 Juli 1962, 3p. (foreign text included). 7351/61 Japan.
Order from INT $18, CO

Trans. of Japanese patent 7351/61 by Tokyo Jishaki (Magnet) Co. Ltd., filed 3 Aug. 1959, pub. 12 June 61

DESCRIPTORS: *Magnets, Magnetic properties, *Magnetic alloys.

APPARATUS FOR THE REDUCTION OR FUSION OF ORE BY MEANS OF THE COUNTERFLOW OF POWDERED ORE AGAINST THE CURRENT OF GASEOUS SUBSTANCE. 25 July 1962, 9p. (foreign text included) 2751/60 Japan.
Order from INT $42.50

Trans. of Japanese patent 2751/60 by Yukio Nogiwa of 121-1 Narimune, Suginami-ku, Tokyo, filed 25 Sep 57.

DESCRIPTORS: *Ores, *Reduction, *Melting, Powders, Gases, Current regulators, Installation.

CAST STEELS: DIMENSIONAL MARGINS AND TOOLING ALLOWANCES IN ROUGH CASTINGS (TECHNICAL RECOMMENDATION BNF 311-24). Jan 63.
Order from BISI £3 BISI-2896

Trans. of Journal d'Informations Techniques des Industries de la Fonderie (France) 1962, Mar, p. 11-21.

DESCRIPTORS: Steel, *Steel castings, *Precision finishing, Design, Tolerances (Mechanics).

HARD-SOLDERING ALLOYS. 28 August 1962, 6p. (foreign text included). 216.624 Japan.
Order from INT $18.50

Trans. of Japanese patent 261.634 by The Mond Nickel Co. Ltd., Thames House N.W., Milbank, London, filed 29 Sep 58.

DESCRIPTORS: *Soldering alloys, *Brazing.

MANUFACTURING METHOD FOR LARGE-GRANULED SPONGE IRON FROM IRON SAND. 25 July 1962, 7p. (Foreign text included). 2757/60 Japan.
Order from INT $25.00

Trans. of Japanese patent 2757/60 by Toohoku Satetsu Kogyo co. Ltd., 2-7 Hirakawa-cho, Chiyoda-ku, Tokyo, filed 2 April 58.

DESCRIPTORS: *Iron, Ores, Sand, Metal sponges, *Grains, Production.

METHOD FOR METAL-FILLING OF COPPER ALLOY ONTO CAST IRON. 25 July 1962, 5p. (foreign text included). 5758/55 Japan.
Order from INT $26.00

Trans. of Japanese patent 5758/55 by Minoru Fukuda of 204-8 Kishi-cho, Urawa City, filed 8 March 54.

DESCRIPTORS: *Cast iron, Copper alloys, *Copper coatings, Metal coatings.

A METHOD OF MAKING HEAT-RESISTIBLE THE LEAD-SOAKED SURFACE OF IRON STEEL AND OTHER MATERIAL. 25 July 1962, 5p. (foreign text included). 173717 Japan.
Order from INT $20.00

Trans. of Japanese patent 173717 by Toshiji Matsuzawa of 642 Kitasenzoku-cho, Oomori-ku, Tokyo, filed 1 March 46.

DESCRIPTORS: Iron, Steel, Materials *Lead, *Metal coatings, Surfaces, *Heat resistant alloys.

PROCESS FOR PLATING GOLD, SILVER, ANTIMONY LEAD, OR TIN, ETC. TO IRON. 25 July 1962, 6p. (foreign text included). 10308/57 Japan.
Order from INT $20.50

Trans. of Japanese patent 10308/57 by Tatsuo Ishida of 169 Kurihara, Kukimachi, Minami-Saitama-Gun, Saitama Pref., filed 29 March 56.

DESCRIPTORS: *Iron, Gold plating, Silver plating, Antimony, *Plating, Lead, Tin.

STRETCH-DRAWING METHOD FOR SHEET. 29 Oct 47, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18476

Trans. of German patent 729, 429, 16 Dec 42, granted 19 Nov 42, pat. from 11 Mar 41.

DESCRIPTORS: *Drawing (Machine processing), *Metals Material forming, Friction, Deformation, *Vibration, Metal forming presses, *Machines.

TENTATIVE EAST GERMAN STANDARD SPECIFICATION ANALYTICAL METHOD FOR SUBMERGED ARC WELDING POWDER. Jan 63.
Order from BISI £3 BISI-2994

Trans. of Standardisierung (East Germany) 1959 [v. 5] June, p. 2/1153-2/1168 (Cl.: 621.791.048).

DESCRIPTORS: Standards, Specifications, Chemical analysis, *Arc welding, Underwater welding, Welds, Welding fluxes, *Powder metals, East Germany.

TREATING METHOD FOR IRON ORE, ETC. 1 August 1962, 10p. (foreign text included). 2752/60 Japan.
Order from INT $48.00

Trans. of Japanese patent 2752/60 by Yukio Nogiwa of 121-1 Narimune, Suginami-ku, Tokyo, filed 4 Nov 57.

DESCRIPTORS: *Iron, *Ores, Processing.

WET-SYSTEM LEAD-PLATING METHOD FOR IRON SURFACE. 25 July 1962, 4p. (foreign text included). 8008/54 Japan.
Order from INT $22.00

Trans. of Japanese patent 8008/54 by Fumio Hirata of 1734-3 Kosonecho, Kiryu City, filed 25 June 53.

DESCRIPTORS: *Iron, Surfaces, *Lead, *Plating Solutions.

Aptekar', I. L. and Kamenetskaya, D. S.
THERMODYNAMICS OF PHASE TRANSFORMATIONS IN BINARY ALLOYS. [1962] 6p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5184

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 3, p. 636-639.

DESCRIPTORS: *Alloys, *Phase transitions, *Thermodynamics, Equations of state.

Bennewitz, J.
INVESTIGATIONS ON ROLLING TEXTURE IN IRON AND BODY CENTERED CUBIC IRON ALLOYS. Jan 63.
Order from BISI £5 BISI-2945

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 6] p. 393-403

DESCRIPTORS: *Iron alloys, Rolling mills, *X-ray diffraction analysis, Determination, Physical properties.

Bergognon, P., Bourion, R., and Gibrat, R.
NUCLEAR ENERGY IN THE STEEL INDUSTRY. Jan 63
Order from BISI £3 15s BISI-3001

Trans. of mono. International Conference on the Peaceful Uses of Atomic Energy (no. 2) [Geneva] 1958. [Proceedings] A/Conf. 15/P1136, May, 24.

DESCRIPTORS: *Steel industry, *Nuclear energy, Energy, Industrial plants, *Nuclear power plants, Design, *Blast furnaces, Air. Gases, Particles.

Boenisch, E.
A METHOD FOR DETERMINING HYDROGEN IN STEEL AND NON-FERROUS METALS. Jan 63.
Order from BISI £6 15s BISI-2979

Trans. of Materialprüfung (West Germany) 1962, v. 4 [no. 7] p. 247-258.

DESCRIPTORS: Determination, Chemical analysis, *Hydrogen, *Steel, *Metals, Test methods, Iron alloys

Brotzmann, K.
REACTIONS BETWEEN MAGNESIUM OXIDE AND IRON MELTS UNDER REDUCED PRESSURE. Jan 63.
Order from BISI £8 10s BISI-2916

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1960, v. 31 [no. 2] p. 67-81.

DESCRIPTORS: Steel industry, Metallurgy, *Iron, Stability, *Magnesium compounds, *Oxides, *Chemical reaction, Crucibles, Pressure.

Cihal, V., Prazak, M., and Mechura, J.
THE INFLUENCE OF CERTAIN ALLOYING ELEMENTS ON THE PROPERTIES OF CORROSION-RESISTANT AUSTENITIC STEELS. Dec 62.
Order from MT $21.25 MT Trans-289

Trans. of Strojirenstvi (Czechoslovakia) 1962, v. 12, no. 4, p. 283-287.

DESCRIPTORS: Alloys, Corrosion research, *Corrosion resistant alloys, *Steel, *Austenite.

Emel'yanov, V. S. and Evstyukhin, A. I.
METALLURGY AND METALLOGRAPHY OF PURE METALS. 1962, 346p.
Order from GB $9.80(paper) $14.95(cloth)

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Metals, Metallurgy, *Metallography, Structural properties.

Falck, H.
PULLING-FORCE IN WIRE-DRAWING. 20 Dec 48 [13]p. (figs. formulae omitted).
Order from SLA $1.60 62-18495

Trans. of Tekniska Föreningen i Finland. Förhandlingar, 1948 [no. 1] p. 3-11.

DESCRIPTORS: *Wire, Drawing (Machine processing), Mechanical working.

Hadamek, V.
NEW TRENDS IN THE DESIGN OF HOT BLAST STOVES. Dec 62.
Order from MT $11.90 MT Trans-272

Trans. of Hutnik (Czechoslovakia) 1962, v. 12, no. 1, p. 3-5.

DESCRIPTORS: *Blast furnaces, Design, Steel industry.

Horstmann, D.
THE INFLUENCE OF CHEMICAL COMPOSITIONAND STRUCTURE OF THE STEEL AND ZINC COAT ON THE PROPERTIES OF COLD ROLLED, ZINC-COATED SHEETS. Jan 63.
Order from BISI £6 BISI-2973

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 6] p. 338-347.

DESCRIPTORS: Chemistry, *Sheets, *Steel, Mechanical properties, Coatings, *Zinc coatings, Sulfur, Phosphorus, Aluminum, Thickness.

Kessner, A. and Specht, H.
THE EFFECT OF COLD DRAWING UPON THE WELDING PROPERTIES OF BARE STEEL ELECTRODES. [1962] 15p.
Order from SLA $1.60 62-18933

Condensed trans. of Arch[iv für das] Eisenhüttenw[esen] (Germany) 1935, v. 9, no. 5, p. 231-239.

DESCRIPTORS: Electrodes, *Steel, Cold-working, *Welding, *Welded joints, Mechanical properties.

Kozina, T.
AUTOMATIC REVERSAL OF HOT BLAST STOVES. Dec 62.
Order from MT $29.90 MT Trans-244

Trans. of Hutnik (Czechoslovakia) 1962, v. 12, no. 2, p. 54-60.

DESCRIPTORS: *Blast furnaces, Automatic.

Kremer, R. and Redr, M.
SCALING LOSS IN SOAKING PITS. Dec 62.
Order from MT $17.20 MT Trans-245

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 1, p. 19-23.

DESCRIPTORS: *Steel, Processing, *Oxidation, Phase studies.

Kupalov, M. P.
UEBERZUG FUER GUSSEISERNE TIEGEL ZUM SCHMELZEN VON ALUMINIUMLEGIERUNGEN (Coating for Castiron Crucibles to Melt Aluminum Alloys). 1p. (text in German).
Order from TIB $0.70

Trans. of Liteinoe Proizvodstvo (USSR), 1959, no. 12, p. 38-39.

DESCRIPTORS: *Coatings, Cast iron, *Crucibles, Aluminum alloys.

Langhans, W. U.
HEAT TRANSFER AND PRESSURE LOSS IN REGENERATORS WITH GRID TYPE CHECKER WORK. Jan 63.
Order from BISI 3 4 5s BISI-2968

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 6] p. 347-353.

DESCRIPTORS: *Heat transfer, *Pressure, Measurement, Test methods, *Heat exchangers, Brick, Combustion chambers.

Livenets, I. A.
HYDRAULIC CONTROL OF THE STOPPER MECHANISM OF A STEELMAKING LADLE. Dec 62.
Order from MT $11.30 MT Trans-223

Trans. of #Metallurg (USSR) 1961, v. 6, no. 7, p. 13-17.

DESCRIPTORS: *Hydraulic power systems, Control, *Steel industry, *Industrial equipment, Smelting.

Martens, Adolf.
APPARATUS FOR TESTING OF METALS WITH RESPECT TO THEIR THERMOELECTRICAL POSITION AND HOMOGENEITY. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18412

Trans. of German patent 23,580, 5 Sep 1883, cl. 42, pat. from 25 Jan 1883.

DESCRIPTORS: Machines, *Test equipment, *Metals, *Thermoelectricity, *Metallurgical analysis.

Mikryukov, V. E.
THERMISCHE UND ELEKTRISCHE EIGENSCHAFTEN VON Cu, Ag, Au, Al SOWIE DER LEGIERUNGEN DES SYSTEMS Cu - Be. (Thermal and Electrical Properties of Cu, Ag, Au, Al as well as Alloys of the System Cu-Be). (text in German).
Order from TIB $2.60

Trans. of Mos[cow] U. Vestnik (USSR) 1957 [v. 12] [Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii] no. 6, p. 57-67.

DESCRIPTORS: *Electrical properties, *Copper, *Metals, Alloys, Silver, Gold, Aluminum, Beryllium, Thermodynamic properties.

Orlov, Yu. A.
GRANULATION OF PIG IRON. Dec 62.
Order from MT $4.25 MT Trans-266

Trans. of #Metallurg (USSR) 1962, v. 7, no. 5, p. 13-14.

DESCRIPTORS: *Iron, *Grains (Metallurgy), Castiron

Osipov, V. P., Lisov, I. V., and Nakonechnyi, N. F.
TEEMING OF HIGH-ALLOY GRADES OF STEEL UNDER FLUXES. Jan 63.
Order from BISI 3 10s BISI-3011

Trans. of Voprosy Proizvodstva Stali (USSR) 1961, v. 8, p. 88-95.

DESCRIPTORS: Liquid metals, *Steel, Processing, *Fluxes (Fusion), *Castings.

Point, J. J.
MICRODETERMINATION OF CARBON IN PROTON IRRADIATED IRON. Jan 63.
Order from BISI 3 BISI-3098

Trans. of mono. International Conference on Radioisotopes in Scientific Research [Paris, 1957. Proceedings] Paper no. UNESCO/NS/RIC/48.

DESCRIPTORS: Microchemistry, *Microanalysis, *Carbon, Determination, *Iron, *Radioactivation analysis, Protons.

Pollack, A.
ECONOMICAL PICKLING IN THEORY AND PRACTICE. 1 Feb 56, 7p. (figs. refs. omitted).
Order from SLA $1.10 52-18614

Trans. of Metalloberfläche (West Germany) 1955, v. 9 [no. 2] p. 17A-22A.

DESCRIPTORS: *Pickling, Economics, Corrosion inhibition.

Saenko, G. P.
EFFECTS OF NEUTRON IRRADIATION ON THE ORDERED ALLOY Fe_3Al (Deistvie Neitronnogo Oblucheniya na Uporyadochivayushchiisya Splav Fe_3Al). [1962] 18p. 3 refs.
Order from OTS or SLA $1.60 AEC-tr-5245

Trans. of a preprint of mono. I[nternational] A[tomic] E[nergy] A[gency] Symposium on Effects of Neutron Emission on the Electric Resistance of Certain Metals, Vienna, 7-11 May 62. [Proceedings] paper no. SM-25/86.

DESCRIPTORS: Alloys, *Iron alloys, *Aluminum alloys, *Neutron bombardment, *Radiation effects, Electrical properties, Resistance, Magnetic moments, Lattices, X-ray diffraction analysis.

The report sets forth the results of an investigation of the action of reactor neutron irradiation on the ordered

alloy Fe_3Al. The irradiation was performed in the active zone of an RFT reactor with four different integral doses within limits of $3 \cdot 10^{18}$ to $1.35 \cdot 10^{20}$ n/cm^2, at a temperature of ~80°C. The alloy was prepared for investigation in the ordered and disordered states. The radiation variation of the electric resistance, magnetic moment, crystal lattice period, and intensity of the superstructural lines were studied. Part of the irradiated material was subjected to isochronal and isothermal annealing. A discussion of the results obtained is presented. (Author)

Schröder, Edmund.
SOLDERING AND BRAZING PROCESS USING RADIANT HEAT. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18611

Trans. of French patent 656, 482, gr. 8, cl. 3, appl. 26 June 28, granted 2 Jan 29, pub. 8 May 29, appl. in Germany 28 June 27.

DESCRIPTORS: *Soldering, *Brazing, *Heating elements.

Schulze, A. and Eicke, H.
ELECTRIC BEHAVIOR OF THIN METAL COATINGS. I. OUTLINING THE PROBLEM. II. EXPERIMENTAL ARRANGEMENT AND MEASURING METHODS. [1962] 6p. (figs. refs. omitted).
Order from SLA $1.10 62-18578

Trans. of Metall (West Germany) 1953, v. 7, no. 3/4, p. 106-108.

DESCRIPTORS: *Metal coatings, *Thin films, Resistance (Electrical), Temperature.

Schulze, A. and Eicke, M.
ELECTRIC BEHAVIOR OF THIN METAL COATINGS. III. RESULTS OF MEASUREMENT. [1962] 23p. (figs. refs. omitted).
Order from SLA $2.60 62-18639

Trans. of Metall (West Germany) 1953, v. 7, no. 5/6, p. 171-182.

DESCRIPTORS: *Metal coatings, *Thin films, Resistance (Electrical), Temperature.

See also 62-18578.

Sedlacek, V.
VACUUM AS THE PROTECTIVE ATMOSPHERE DURING THE ANNEALING OF NON-FERROUS METALS. Dec 62.
Order from MT $20.00 MT Trans-241

Trans. of Hutnicke Listy (Czechoslovakia) 1961, v. 16, no. 11, p. 806-810.

DESCRIPTORS: Vacuum apparatus, *Annealing, *Vacuum furnaces, *Metals.

Shur, A. B.
ERRORS IN THE CONTROL OF THE GAS FLOW AND THE DISTRIBUTION OF MATERIALS IN THE THROAT. Dec 62.
Order from MT $17.55 MT Trans-286

Trans. of #Metallurg (USSR) 1962 [v. 7] no. 8, p. 2-5.

DESCRIPTORS: Steel industry, *Blast furnaces, Errors, *Gas flow, Materials, Distribution, Smelting.

Tomilin, I. A.
THERMODYNAMIC ACTIVITY OF ANTIMONY IN ALPHA-IRON (Opredelenie Termodinamicheskoi Aktivnosti Sur'my v Al'fa-zheleze). [1962] [10]p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5157

Trans. of mono. Conference on the Use of Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 60. Proceedings [Vienna] 1962, p. 225-233.

DESCRIPTORS: *Iron alloys, *Antimony alloys, Lead alloys, Liquid metals, *Thermodynamics, Solubility, Tracer studies, Phase studies.

A method is suggested for determining the thermodynamic activity of antimony dissolved in alpha-iron, based on the study of antimony distribution between the two phases: liquid lead and solid iron. By this method, it was found that solid solutions of antimony in alpha-iron can be distinguished by positive divergences from the ideal state. Over a fairly wide range of concentrations, solutions of antimony in iron obey Henry's law. Special experiments on the distribution of antimony between lead and liquid iron showed that in the liquid state also the iron-antimony system is marked by positive divergences from the ideal state when small concentrations of antimony are present. The heat required for the solution of antimony in alpha-iron, and the excess partial molar entropy, were calculated from the activity temperature. The results were used for accurately locating the line showing the solubility limit of antimony in alpha-iron. Since alloys of antimony with iron were obtained by diffusion saturation and not by cooling from the liquid state, there was no liquefaction. Thus the lattice constant of the alloys and its relation to the alloy concentration could be reliably determined. The solubility limit established from X-ray data agrees with that obtained with Sb^{124}. (Author)

Vasilev, V. E. and Vashenko, K. I.
THE METALLURGY OF ACID-RESISTING IRON-SILICON ALLOYS. July 42 [22]p. 30 refs. BISI Trans. no. 96; NLL M. 4276.
Order from OTS or SLA $2.60 62-24182

Trans. of Teoriya i Praktika Metallurgii (USSR) 1938, no. 4, p. 20-32.
Also available from OTS or ETC $1.90 as 61-17185, MTWL-673, 23p.

DESCRIPTORS: *Iron alloys, *Silicon alloys, Corrosion resistant alloys, Metallurgy, Acids.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 92. 3 Jan 63 [44]p. JPRS: 16958.
Order from OTS or SLA $4.60 63-13677

Trans. of Partiinaya Zhizn' (USSR) 1962, no. 22, p. 37-40; and from Pravda Ukrainy (USSR) 1962, 4 Nov, p. 1; Pravda, Moscow (USSR) 1962, 9 Nov, p. 1; 11 Nov, p. 2-3; Rabochaya Gazeta (USSR) 1962, 21 Sep, p. 1-2.

DESCRIPTORS: *Industrial production, *Metallurgy, Blast furnaces, Rolling mills, Wastes (Industrial), Sintering furnaces, Cast iron, Economics, Open hearth furnaces, Steel industry, Iron industry.

Contents:
New methods and materials in construction of blast furnaces, by D. Beizerman
Blooming mill "1103" starts operations, by D. Akul'shin
Utilization of waste material in metallurgy, by I. Goncharov and Yu. Dorofeev
Blast furnace operations below capacity due to errors in planning, by V. Parfenov
Planning indexes and the rights of enterprises, by S. Zlosinskii
Open-hearth furnace problems at the plant imeni Il'ich, by E. Kaluzhskii
Zaporozhstal' plant leads in the production of iron and steel, by A. Shnaidruk and N. Titarenko.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 96. 1 Feb 63 [25]p. JPRS: 17423.
Order from OTS $0.75 63-21058

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 10, p. 3-16 and ##37-38. ##An abstract trans. is available from OTS or SLA $1.10 as 63-15317, AID-S-63-5, 9 Jan 63 [2]p.

DESCRIPTORS: *Metallurgy, Iron, Quartz, Mining engineering, Ores, Steel, Smelting, Slags, Electric arcs, Furnaces, Manufacturing methods, Quality control, Metal plates, Mechanical properties.

Contents:
Systems for underground working of ferruginous quartzites at the Kursk magnetic anomaly, by V. I. Terent'ev and others
The electric molten-slag method of smelting steel, by G. P. Malikov
Improving the quality of low-carbon steel for cold-rolled plates, by D. A. Litvinenko
##Superstrong pressed steel semifabricated parts, by Yu. N. Kabanov and others.

Bogdandy, L. von.
SINTERING, DEGASSING AND REDUCTION. Pt. 1B of The Kinetics of Iron and Steelmaking Reactions. Dec 62, 4100 words.
Order from HB $9.80 HB-5585

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1961, v. 32, no. 5, p. 280-286.

DESCRIPTORS: *Reaction kinetics, *Iron, *Steel, Sintering, Degasification, Reduction.

Karnaukhov, M. M.
PRESENT-DAY WROUGHT-IRON PRODUCTION PRACTICE. Sep 41 [7]p. (1 fig. omitted) 1 ref. BISI Trans. no. 46; NLL M. 3416.
Order from OTS or SLA $1.10 62-23978

Trans. of Metallurg (USSR) 1940 [v. 15] no. 2, p. 16-20. Also available from OTS or ETC $1.55 as 61-17187, MTWL-675, 8p.

DESCRIPTORS: *Wrought iron, *Metallurgy, Steel, Slags.

Loshchilov, S. and Fastovskii, B.
THE UTILISATION OF BESSEMER STEEL FOR SOME SECTIONS AND OTHER PRODUCTS. [PT. II.]. Sep 42 [15]p. (4 figs. omitted) 1 ref. BISI Trans. no. 100; NLL M. 4275.
Order from OTS or SLA $1.60 62-24181

Trans. of Stal' (USSR) 1940 [v. 10] no. 2, p. 17-22. Also available from OTS or ETC $1.85 as 61-17184, MTWL: 672, 16p.

DESCRIPTORS: *Steel, Cast steel, Metallurgy, *Rolling mills.

Lozinskii, M. G.
CONTINUOUS SURFACE HARDENING OF STEEL BY THE HIGH-FREQUENCY INDUCTION METHOD. Aug 44 [16]p. 9 refs. [BISI] Trans. no. 192; NLL M. 3405.
Order from OTS or SLA $1.60 62-23970

Trans. of Vestnik Metallopromyshlennosti (USSR) 1940, no. 3, p. 50-60.
Also available from OTS or ETC $1.85 as 61-17202, MTWL-670, 17p.

DESCRIPTORS: *Steel, Hardening, Induction heating, *High-frequency heating.

Mathesius, K. and Bentke, H.
TESTING SPRING STEELS WITH CRACK DETECTING APPARATUS. [1962] 7p. (figs. omitted).
Order from SLA $1.10 62-18437

Partial trans. (p. 1587-1591) of Stahl und Eisen (West Germany) 1952 [v. 72, no. 25] p. 1587-1595.

DESCRIPTORS: Rods, *Steel, *Fracture (Mechanics), *Non-destructive testing.

Nielsen, E. J.
RAPID POLISHING OF METALLOGRAPHIC CAST IRON SPECIMENS. [1962] 13p. 14 refs.
Order from SLA $1.60 62-18950

Trans. of Arch[iv für das] Eisenhüttenw[esen] (West Germany) 1954, v. 25, p. 89-92.

DESCRIPTORS: *Cast iron, Metallography, *Electrolytic polishing, Impurities, Graphite.

An alternating polishing method for the polishing of metallurgraphic sections with nonmetallic inclusions which are not affected by the electrolytic process, is described. In this method, electrolytic polishing is followed by mechanical polishing. Thus far, the method has proved particularly suitable for gray cast iron and malleable cast iron with graphite inclusions. The appropriate procedure, particularly for avoiding a superficial deformation layer and smearing action, has been studied. The method may also be applied to low-carbon or carbide-containing steels with nonmetallic inclusions. (Author)

Pomey, Jacques.
CARBIDES FORMED DURING BAINITIC TRANSFORMATION OF STEELS (Carbures se Formant dans la Transformation Baintique des Aciers). [1962][3]p. 2 refs.
Order from SLA $1.10 62-18787

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1954, v. 238, no. 24, p. 2318-2320 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Steel, Transformations, *Bainite, *Carbides.

Isothermal decomposition of austenite into bainite, when slowed down enough in velocity, produces first ε hexagonal carbide (Hofer carbide) which breaks down into χ orthorhombal carbide (Hägg carbide); otherwise, the Hägg carbide is obtained without intermediaries. (Author)

Light Metals

TITANIUM IN SOVIET POWDER METALLURGY. 16 Jan 63 [59]p. 16 refs. JPRS: 17155.
Order from OTS or SLA $5.60 63-15119

Trans. of Titan i Ego Splavy (USSR) 1960, v. 3, p. 3-16, 84-89, 99-106, 152-158.
A review trans. of v. 3 is available from LC or SLA mi$1.80, ph$1.80 as BR-SOV/4508, 3p.

DESCRIPTORS: *Powder metallurgy, Titanium, Titanium alloys, *Aluminum alloys, Microstructure, Mechanical properties, Heat treatment, Powder metals, Powder alloys, Rolling mills, Tests, Sintering.

Contents:
Investigation of the microstructure and mechanical properties of alloys of titanium with aluminum, by N. N. Timoshenko and E. V. Petunin
Effect of heat treatment on the structure and properties of titanium alloys, by B. A. Borok and others
Powder metal alloys with high specific tenacity, by R. P. Schegolev and L. S. Golubev
Development and investigation of titanium-base powder metal alloys, by N. N. Timoshenko and E. V. Petunin
Rolling titanium powder into thin strip by the Gorkii Polytechnic Institute method, by G. I. Aksenov and others.

Altenpohl, D.
LATTICE VACANCIES IN ALUMINIUM. [Presented at the International Light Metal Conference (no. 4) Leoben, 20 June 61]. [1962] [36]p. 67 refs.
Order from SLA $3.60 62-18307

Trans. of Aluminium (West Germany) 1961, v. 37, no. 7, p. 401-411.
Other translations are available from FRI as FRI Trans-172 [1962] and from SLA $2.60 as 62-14836 [1962] 26p.

DESCRIPTORS: *Aluminum, Crystal structure, *Lattices.

Nonferrous (except light) Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 47. 28 Jan 63 [30]p. JPRS: 17311.
Order from OTS or SLA $2.60 63-15367

Trans. of Byulleten' Stroitel'noi Tekhniki (USSR) 1962 [v. 19] no. 11, p. 43-45; Sovetskaya Geologiya (USSR) 1962, no. 4, p. 10-14; [no. 7] p. 3-7; and from Pravda, Moscow (USSR) 1962, 15 Nov; Kommunist, Erevan (USSR) 1962, 4 Nov; Pravda Vostoka (USSR) 1962, 18 Nov; Ekonomicheskaya Gazeta (USSR) 1962, no. 48[69] p. 42.

DESCRIPTORS: *Industrial production, *Metallurgy, Industrial plants, Construction, Aluminum compounds, Oxides, Economics, Ores (Metal sources), Deposits, Vermiculite, Geological survey, Minerals, Siberia.
Contents:
The project task for the construction of the Achinsk alumina plant
Economic aspects of an enterprise, by P. Tabalov
Developing the Shamlug ore mine, by A. Teryaev
Progress at the Almalyk deposit, by N. Tsogoev
Expand the applications of vermiculite
Current tasks of geological survey work in the Azerbaidzhan SSR, by M. A. Mustafabeili
Results of geological survey work in Siberia nonferrous metal deposits, by B. M. Kosov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 48. 28 Jan 63 [54]p. JPRS: 17313.
Order from OTS or SLA $5.60 63-15379

Trans. of 7 selected articles from Sep 62 issues of 6 Soviet newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Ores (Metal sources), Mineral products, Tin, Mining engineering, Diamonds, Chlorination, Chemical engineering, Copper, Molybdenum, Lighting equipment.

Contents:
Problems concerning ore utilization in the Kazakh SSR, by K. I. Satpaev
Tin ore deposits in the Far East, by A. Chemonin
Diamond mining in Siberia, by A. Murzin
For better utilization of Bashkirian ore, by M. Valitov
Experimentation with chlorination of nonferrous ores by several scientific and research institutes, by N. Sazhin and V. Evdokimov
Progress at the Kadzharan copper-molybdenum combine, by G. Nuridzhanyan
Rad tape output of lighting fixtures, by S. Maloi.

Geguzin, Ya. E.
THE ACTIVATION ENERGY OF THE PROCESS OF DIFFUSION CREEP IN DISORDERED SUBSTITUTIONAL SOLID SOLUTIONS OF METALS [Ob Energii Aktivatsii Protsessa Diffuzionnoi Polzuchesti Metallicheskikh Neuporyadochennykh Tverdykh Rastvorov Zameshcheniya]. Aug 59 [7]p. 15 refs. BISI Trans. no. 1398; [DSIR] NLL M. 4730.
Order from OTS or SLA $1.10 62-24231

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120 no. 4, p. 819-822.

DESCRIPTORS: *Metals, Creep, Diffusion, Mathematical analysis.

The Activation energy can be calculated from the temperature dependence of the self-diffusion coefficients, from the heat of fusion of the components and the quantity $\angle u$, obtainable from the equilibrium diagram, and also from experimental determination of the effect of temperature on rate of diffusion creep. The calculations are made for some non-ferrous binary systems.

Structural Metallurgy and Corrosion

Gerasimov, V. V.
CORROSION OF REACTOR MATERIALS: A COLLECTION OF ARTICLES. Oct 62, 300p, 244 refs.
Order from OTS $4.00 AEC-tr-5219

Trans. of mono. Korroziya Reaktornykh Materialov: Sbornik Statei, Moscow, 1960, 300p.

DESCRIPTORS: *Reactor materials, *Corrosion, Electrochemistry, High temperature research, Steel, Water, Oxygen, *Stainless steel, Aluminum, Pressure, Nuclear power plants, Crystal structure, Steam, *Corrosion inhibition, Fracture (Mechanics), Metals, Stresses, Mechanical properties.

Contents:
Methods of corrosion and electrochemical investigations in water at high temperatures and pressures
Influence of the water composition on the corrosion of construction materials
Corrosion under stress
Intercrystallite corrosion
Corrosion of reactor materials.

Jedlinski, Z., Hippe, Z., and Mauberg, W.
A PHOTOMETRIC METHOD FOR THE QUANTITATIVE ESTIMATION OF SURFACE CORROSION IN METALS. Oct 62 [3]p. 6 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Przemysl Chemiczny (Poland) 1962 [v. 18(41)] no. 2, p. 64ff.

DESCRIPTORS: Metals, Surfaces, *Corrosion, Quantitative analysis, *Photography, Photographic emulsions, *Chemical engineering.

Kidin, I. N.
INFLUENCE OF INDUCTION HEATING ON THE AUSTENITIC GRAIN SIZE OF CARBON STEEL (SUMMARY) [tr. by] R. Sewell. Oct 58 [5]p. BISI Trans. no. 1100; [DSIR] NLL M. 4737.
Order from OTS or SLA $1.10 62-24236

Trans. of Metallov[edenie i Termicheskaya] Obra-[botka] Met[allov] (USSR) 1956, no. 1, p. 40-41.

DESCRIPTORS: *Steel, Microstructure, Temperature, Induction heating, Austenite, Grains (Metallurgy).

Klark, G. B., Mikhailovskaya, M. I. and others.
ELECTROCHEMICAL METHOD OF INVESTIGATING THE ATMOSPHERIC CORROSION OF METALS. June 62 [19]p. 21 refs.
Order from OTS or SLA $1.60 62-18773

Trans. of [Akademiya Nauk SSSR]. Institut Fizicheskoi Khimii. Trudy, 1959, v. 7, p. 11-21.

DESCRIPTORS: Corrosion research, Metals, *Corrosion, *Atmosphere, Surface properties, *Electrochemistry, Laboratory equipment, Moisture, Absorption, Measurement.

By this method of investigating corrosion, it is possible to develop the mechanism of the electrochemical processes, occuring on the surface of metals under the adsorption layers of moisture as well in the clean atmosphere, as in the atmosphere polluted by different gases. (Author)

Krainer, H. and Konopicky, K.
INVESTIGATION OF SINTERED-HARD METALS. 21 Sep 48, 16p. (figs. tables refs. omitted).
Order from SLA $1.60 62-18405

Trans. of Berg- und Hüttenmännische Monatshefte (Austria) 1947 [v. 92, no. 10/11] p. 166-178.

DESCRIPTORS: *Carbides, Metals, Sintering, X-rays, Production, Quality control, Graphite, Grains (Metallurgy), Lattices, Sintered alloys, *Tungsten compounds, *Cobalt.

Martinod, H. and Calvet, J.
STRUCTURAL HARDENING AND REVERSION IN ALUMINUM-NICKEL ALLOYS. [1962] [26]p. 5 refs.
Order from SLA $2.60 62-18928

Trans. of Rev[ue de] Métallurg[ie]. Mémoires Scientifiques (France) 1960, v. 57, no. 5, p. 325-337. Another trans. is available from FRI as FRI trans-179 [1962].

DESCRIPTORS: *Nickel alloys, *Aluminum alloys, Hardening, Temperature, Tensile properties, Reaction kinetics, Structural properties.

Pfeiffer, H.
INFLUENCE OF EMBEDDING SUBSTANCES ON OXIDATION AND CORROSION CHARACTERISTICS OF HEAT-CONDUCTING ALLOYS. Jan 63.
Order from BISI £6 10s BISI-3056

Trans. of Werkstoffe und Korrosion (West Germany) 1961, v. 12 [no. 11] p. 669-680.

DESCRIPTORS: Corrosion research, *Oxidation, *Corrosion, *Heat transfer, *Alloys, Conductors, Embedding substances.

Poboril, F., Prazak, M., and Zezulova, M
CORROSION PROPERTIES OF AUSTENITIC, CHROMIUM-MANGANESE STAINLESS STEELS ALLOYED WITH NICKEL AND MOLYBDENUM (INCLUDING POTENTIOSTATIC DETERMINATION). Dec 62.
Order from MT $31.55 MT Trans-295

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 10, p. 705-711.

DESCRIPTORS: *Corrosion, Austenite, Chromium, Manganese, *Stainless steel, *Alloys, Nickel alloy, Molybdenum alloys.

Suprunov, V. A. and Kisel'nikov, V. N.
THE INFLUENCE OF HEAT TREATMENT BY A CURRENT OF HIGH FREQUENCY ON THE CORROSION OF WELDED JOINTS OF 1Kh18N9T STEEL. 29 Jan 63, 8p. 8 refs. JPRS: 17356.
Order from OTS $0.50 63-21012

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1962, v. 5, no. 2, p. 336-339

DESCRIPTORS: *Steel, Chromium alloys, Nickel alloys, Austenite, Corrosion inhibition, *Welded joints, Heat treatment, *Induction heating, High frequency.

Wickert, K.
FOULING AND CORROSION IN COAL-FIRED BOILERS [1962] 15p.
Order from ATS $19.75 ATS-63P66G

Trans. of Energie (West Germany) 1962, v. 14, no. 4, p. 130-136.

DESCRIPTORS: *Boilers, Coal, Coal gas, Fuels, *Corrosion, *Fouling.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ÉNERGIE ATOMIQUE [ATOMIC ENERGY] 1961, VOL. 11, NO. 3. [1962] [66]p. refs (text in French).
Order from OTS or SLA $6.60 62-25655

Trans. in French of #Atomnaya Energiya (USSR) 1961, v. 11, no. 3, p. 213-[260].
Translations in English of p. 251-255, 261, 268-269 are available separately elsewhere.

DESCRIPTORS: *Atomic energy, *Ion accelerators, Silicones, *Thermal diffusion, Sodium, Lithium, Beryllium, Numerical analysis, *Isotope separation, Distillation, Vacuum apparatus, *Synchrocyclotrons, Mesons, *Fission, *Nuclear isomers, Neutrons, Iron, Thermal stresses, *Thermodynamics, Uranium, Calcium, *Heat transfer.

ÉNERGIE ATOMIQUE [ATOMIC ENERGY] 1961, VOL. 11, NO. 4: [SELECTED ARTICLES]. [1962] [123]p. refs. (text in French).
Order from OTS or SLA $10.10 62-25658

Trans. in French of #Atomnaya Energiya (USSR) 1961, v. 11, no. 4, p. 313-378, 395-403.
Translations in English of p. 313-344, 356-378, 395-399 are available separately elsewhere.

DESCRIPTORS: Atomic energy, *Plasma physics, *Magnetic fields, Cyclotrons, *Nuclear reactions, Mathematical analysis, Uranium, *Fast neutrons.

ÉNERGIE ATOMIQUE [ATOMIC ENERGY] 1961, VOL. 11, NO. 5. [1962] [78]p. refs. (text in French).
Order from OTS or SLA $7.60 62-25656

Trans. in French of #Atomnaya Energiya (USSR) 1961, v. 11, no. 5, p. 421-[461].
Translations in English of p. 425-430 and 442-447 are available separately elsewhere.

DESCRIPTORS: *Atomic energy, *Ions, Radioactivity, Cyclotrons, *Heat transfer, Fluids, Heat exchangers, *Isotope separation, Lithium, Beryllium, Neutrons, *Fission, *Gamma rays, Cobalt, *Neutron absorption, Iron, *Linear accelerators, Particles, Graphite, *Combustion, *Uranium, *Labelled substances, Oxidation, Standards, *Minerals, Smokes, *Radioactive fall-out.

ÉNERGIE ATOMIQUE [Atomic Energy] 1961, VOL. 11, NO. 6. [1962] [96]p. refs. (text in French).
Order from OTS or SLA $8.60 62-25657

Trans. in French of #Atomnaya Energiya (USSR) 1961, v. 11, no. 6, p. 493-[555].
Translations in English of p. 493-505, 515-527, 533-538 are available separately elsewhere.

DESCRIPTORS: *Atomic energy, Plasma physics, Electron mass, *Fast neutrons, *Refrigerants, Fluid dynamics, Water, Spectographic analysis, *Isotope separation, Ion exchange, *Atmosphere, Radiological contamination, *Thorium, Photochemistry, Nuclear reactions, Photographic emulsions, *Fluidized solids, *Polonium, Oxides, Uranium compounds.

ENERGIE ATOMIQUE [ATOMIC ENERGY] 1962, VOL. 12, NO. 1. [1962] [113]p. refs. (text in French).
Order from OTS or SLA $9.60 62-33251

Trans. in French of #Atomnaya Energiya (USSR) 1962, v. 12, no. 1, p. 5-[72].
Translations in English of p. 58-66 are available separately elsewhere.

DESCRIPTORS: *Atomic energy, *Neutron bombardment, *Cyclotrons, Neutrons, *Thermodynamics, Gamma rays, Absorption, Soils, *Radioactivity, *Fission, Neutrons, Molecular association, *Synchrotrons, Uranium, Dosimeters, *Ion exchange, Beryllium Thorium.

INELASTIC SCATTERING OF NEUTRONS IN SOLIDS AND LIQUIDS. STI/PUB/35. Sep 61, 670p.
Order from National Agency for International Publications, Inc., 801 Third Ave., New York, 22, N. Y. $12.00 as IAEA SU-34.

DESCRIPTORS: Solids, Liquids, Neutrons, *Neutron scattering, *Inelastic scattering.

Draganic, Ivan, Gal, Olga; and Radotic, Milorad, eds.
RADIOCHEMICAL PROCEDURES: WORK WITH RADIOACTIVE ISOTOPES. July 62, 485p. 32 refs.
Order from OTS $6.00 AEC-tr-4499

Trans. of mono. Radiohemiski Praktiku: Rad sa Radioaktivnim Izotopima, Belgrade, 1959 [447p.].

DESCRIPTORS: *Radiochemistry, *Radioactive isotopes, Atomic structure, Nuclei, *Elementary particles, Protons, Deuterons, Alpha particles, Neutrons, Positrons, Electromagnetic waves, *Radioactive decay, Radioactive series, *Statistical analysis, Errors, Probability, Statistical distributions, *Radiation counters, Geiger counters, *Scintillation counters, Nuclear spectroscopy, Gamma-ray spectroscopy, Absorption, *Electrochemistry, *Chromatography, Ion exchange, *Radiochemistry laboratories, Safety, *Decontamination, *Radioactive waste, *Radiological dosage, Dosimeters, Dose rate, *Radiobiology, Radiation sickness, *Nuclear industrial applications, Labelled substances, Non-destructive testing, Medicine, *Thyroid gland, *Autoradiography, Chemical reactions, *Chemical engineering, Polymerization, Hydrazine, Gammexane.

Contents:
Introduction, radiochemistry: a brief historical outline and the possibilities of application
The structure of atoms and atomic nuclei
The passage or radiation through matter
Radioactive decay and radioactive equilibrium
The production of radioactive isotopes
Statistical principles of radioactive measurements
Ionization counter devices
Scintillation counter devices
The technique of radioactive measurements
Determination of the energy of radiation through absorption
Determination of half life ($t_{1/2}$)
The employment of carriers in radiochemistry
Electrochemical methods
Chromatography
Isotopic dilution
The radiochemical laboratory
Technical protection against radioactive emission
The organization of work with radioactive isotopes
Decontamination and the removal of radioactive wastes
The radioisotopic section in hospitals
The energy received by irradiated materials: Units and principles of measurement
Descriptions of several dosimeters
The calculation of doses
Work with some dosimeters for X and γ radiation
The biological effect of radiation
Acute radiation sickness in man
The application of radioisotopes in industry
Application in medicine and biology
The nature of radiation chemical processes
Some radiation chemistry reactions of interest to industry.

Gruzin, P. L.
SOME RESULTS AND THE PROSPECTS FOR THE USE OF ISOTOPES AND NUCLEAR RADIATION IN INDUSTRY AND SCIENTIFIC RESEARCH IN THE USSR. 10 Jan 62, 25p.
Order from OTS or SLA $2.60 AEC-tr-5238

Trans. of #Atomnaya Energiya (USSR) 1961, v. 11, no. 4, p. 379-394.
Another trans. is available from OTS or SLA $11.50 in 62-19771, JPRS-12667, 15 Feb 62 [158]p.

DESCRIPTORS: *Nuclear industrial applications, Scientific research, Radioactive isotopes, *Tracer studies, *Autoradiography, Radiography, Relays, *Neutron diffraction analysis, Nuclear spectroscopy.

Hashimoto, Fumio.
PROCESS OF FORMATION OF BUBBLES IN IRRADIATED URANIUM. July 62, 9p. 4 refs.
Order from OTS $0.50 AEC-tr-5074

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 9] p. 518-522.

DESCRIPTORS: *Uranium, *Radioactivity, *Bubbles, Fast neutrons, Fission products, Neutron flux, Thermal neutrons, Neutron cross sections, Differential cross sections, Nucleation, Gases, Helium group gases, *Krypton, *Xenon, Atoms, Absorption.

The report probes into the process of disappearing of the vacancies created by irradiation and the behavior of the gas atoms in the uranium in the form of functions of temperature and concentration of the trapping site, thereby clarifying that the process of formation of bubbles is influenced remarkably by concentration of the trapping site or the temperature of irradiation. (Author)

Marin, A. N., Banasevich, S. N., and Bogdanov, R. V.
AN INVESTIGATION OF THE CHEMICAL STATE OF RADIOPHOSPHORUS IN KCl CRYSTALS IRRADIATED WITH HIGH-ENERGY PROTONS (Issledovanie Khimicheskogo Sostoyaniya Radiofosfora v Kristallakh KCl Obluchennykh Protonami). [1962] [12]p. 16 refs.
Order from OTS or SLA $1.60 AEC-tr-5055

Trans. of mono. Symposium on [the] Chemical Effects of Nuclear Transformations, Prague, 24-47 Oct 60. Proceedings, v. 2 [Vienna] 1961, p. 191-199 (STI/PUB/34).

DESCRIPTORS: *Proton bombardment, *Single crystals, *Potassium compounds, Chlorides, *Phosphorus, Radioactive isotopes, Radiation effects, Valence, Oxidation, Reaction kinetics.

The targets used were monocrystals of KCl which had been heated to 650° to 700°. A 660 Mev proton beam was used, with an integral flux of 10^{12} to 10^{13} protons/cm^2 of target throughout the irradiation. In the irradiated KCl crystals phosphorus was found in all three valence forms -- phosphate, phosphite and hypophosphite. It was noted that crystals of KCl subjected to high-temperature annealing before irradiation contained 10% to 20% of the P^{32} activity in the phosphate fraction, but that in crystals not so treated the contribution of this fraction rose to 50% to 60%. Heating of the irradiated samples at different temperatures for a period of 2 hours showed that the rate of transition to the pentavalent state increases with temperature. The experiments performed in order to detect atomic phosphorus gave a negative result. On the basis of the results obtained in the work a tentative explanation is given of the reactions taking place in the irradiated crystal and the different valence states of the phosphorus obtained.

Migdal, A.
QUADRUPOLAR AND DIPOLAR GAMMA RADIATION OF NUCLEI, tr. by S. Shewchuck. Apr 62, 14p. 6 refs.
Order from OTS or SLA UCRL Trans-822(L)

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1945 v. 15, p. 81-88.

DESCRIPTORS: *Nuclei, *Gamma rays, Nuclear moments, *Quadrupole moments, *Dipole moments, Excitation, Energy, Quantum mechanics, Atomic properties.

The order of magnitude of the matrix elements of dipolar and quadrupolar radiation is evaluated and it is explained why the intensity of the corresponding transitions (with energy around 1 Mev) possess the same order of magnitude. For energies > 1 Mev the intensity of the dipolar transitions must be much greater than the intensities of the quadrupolar. (Author)

Sayasov, Yu. S. and Ivanov, G. K.
THEORY OF MOLECULAR DISSOCIATION BY NEUTRONS: DIATOMIC MOLECULES (Teoriya Dissotsiatsii Molekul Neitronami: Dvukhatomnya Molekuly). [1962] [19]p. 5 refs.
Order from OTS or SLA $1.60 AEC-tr-5152

Trans. of mono. Symposium on the Chemical Effects of Nuclear Transformations, Prague, 24-27 Oct. Proceedings, v. 1 [Vienna] 1961, p. 25-39 (STI/PUB/34).

DESCRIPTORS: *Neutron bombardment, *Molecules, Dissociation, Energy, Neutron reactions, Neutron scattering, Potential theory.

From the Fermi pseudopotential method and the method of adiabatic approximation for molecular wave-functions, a consistent theory is developed for the dissociation of diatomic molecules by neutrons. It is assumed that the energy of the neutrons is of the order of the dissociation energy. It is shown that if the neutron energy is sufficiently greater than the threshold value, i.e., than the dissociation energy of the molecule, the cross-section of this process does not depend on the exact value of the molecular potential but only on the frequency of vibration of the nuclei in the molecule. It is also shown that the given qualitative account of the dissociation of diatomic molecules by neutrons also holds for polyatomic molecules, if corresponding assumptions are made. In the light of the theoretical results, consideration is given to the possibilities of research on molecular properties by methods of molecular neutronoscopy being developed at present. (Author)

Tal'roze, V. L.
REACTIONS OF POSITIVE IONS WITH MOLECULES IN THE GAS PHASE IN THE RANGE 3×10^{-2} - 10^{+2}eV (Reaktsii Polozhitel'nykh Ionov s Molekularmi v Gazovoi Faze v Diapazone 3×10^{-2} - 10^{+2}eV). [1962] [14]p. 26 refs.
Order from OTS or SLA $1.60 AEC-tr-5155

Trans. of mono. Symposium on Chemical Effects of Nuclear Transformations, Prague, 24-27 Oct 60. Proceedings, v. 1 [Vienna] 1961, p. 103-112. (STI/PUB/34).

DESCRIPTORS: *Ions, *Molecules, *Chemical reactions, *Nuclear reactions, Gases, Electrons, Protons, Exchange reactions, Mass spectroscopy.

The results are given of research on chemical transformations occurring on the collision of ions with molecules as a result of the transfer of an electron or heavy particle. It is shown that in the process of charge exchange in polyatomic particles the transition from kinetic to excitation energy is greatly facilitated, which leads to considerable charge exchange cross-sections of all slow ions (in the case of exothermic processes), and of ions with energies only slightly above the threshold (in the case of endothermic processes). Descriptions are given of two ion-molecule reaction mechanisms: with and without formation of long-lived intermediate ions. (Author)

Elementary Particles

Antonov, A. V., Granatkin, B. V. and others.
STUDY OF THE DIFFUSION AND THERMALIZATION OF NEUTRONS IN WATER AND ICE WITHIN A WIDE RANGE OF TEMPERATURES, USING THE IMPULSE METHOD (Issledovanie Diffuzii i Termalizatsii Neitronov v Vode i L'du v Shirokom Diapazone Temperatur s Pomshch'yu Impul'snogo Metoda). [1962] [24]p. 10 refs.
Order from OTS or SLA $2.60 AEC-tr-5143

Trans. of mono. Symposium on the Inelastic Scattering of Neutrons in Solids and Liquids, Vienna, 11-14 Oct 60. Proceedings [Vienna] 1961, p. 377-394 (STI/PUB/35).

DESCRIPTORS: *Neutrons, *Thermal neutrons, *Neutron scattering, Diffusion, *Counting methods, Water, Ice, Low temperature research.

The process of non-stationary diffusion of neutrons was studied in water within the temperature range 0.5 to 286°C and in ice at - 196°C, and values were determined for the diffusion parameters. The diffusion co-efficient values obtained for water were approximated by the polynomial:

$$\frac{D(t)}{D(21^{\circ}C)} = (0.934 \pm 0.028) + (0.289 \pm 0.009) \times 10^{-2}\, t + (0.106 \pm 0.003) \times 10^{-4}\, t^2.$$

It was found that when the water temperature is raised, anisotropy in the angular distribution of the scattered neutrons increases noticeably. It is shown that at the temperature of liquid nitrogen, the neutrons attain a state of thermal equilibrium with the ice in about 45 to 75 μsec. (Author)

Kazarnovskii, M. V., and Stepanov, A. V.
ELASTIC RESONANCE SCATTERING OF SLOW NEUTRONS IN CRYSTALS (Uprugoe Rezonansnoe Rasseyanie Medlennykh Neitronov v Kristalakh). [1962] [7]p. 4 refs.
Order from OTS or SLA $1.10 AEC-tr-5145

Trans. of mono. Symposium on the Inelastic Scattering of Neutrons in Solids and Liquids, Vienna, 11-14 Oct 60. Proceedings [Vienna] 1961, p. 97-100 (STI/PUB/35).

DESCRIPTORS: *Neutrons, *Thermal neutrons, *Neutron scattering, Resonance, *Crystals, Lattices, Quantum statistics.

This work deals with the effect of neutron interaction with the crystal lattice on the shape of the line of resonance absorption of neutrons. Investigation of the resonance scattering of neutrons on various nuclei (e.g., Xe^{135}, Yb^{168}, Tm^{169}, Hf^{177}, Re^{185}, Au^{197}, Pu^{240}), for which E_0 is less than or of the order of several eV and $\Gamma n/ \geq 0.1$ can serve as a method of analyzing the dynamic characteristics of crystals. (Author)

Kazarnovskii, M. V. and Stepanov, A. V.
NEUTRON THERMALIZATION AND THE PROPERTIES OF THE VAN HOVE PAIR CORRELATION FUNCTION (Termalizatsiya Neitronov i Svoistva Funktsii Parnykh Korelyaii Van-Khova). [1962] [12]p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5146

Trans. of mono. Symposium on the Inelastic Scattering of Neutrons in Solids and Liquids, Vienna, 11-14 Oct 60. Proceedings [Vienna] 1960, p. 87-95 (STI/PUB/35).

DESCRIPTORS: *Neutrons, *Thermal neutrons, Neutron scattering, Nuclear reactions, Crystals, Gases, Quantum statistics.

Previous authors, including F. L. Shapiro, developed a formalism with which it was possible to describe neutron thermalization by resolving the neutron distribution function according to energy groups. These energy groups correspond to a system of linear simultaneous equations; all the information about the law of exchange of energy between neutrons and the moderating medium that is necessary for such a description was given by inserting the constants γ_{ik}. The most important of these, γ_{11}, is equivalent to the heat transfer coefficient introduced by von Dardel. Elsewhere, Van Hove showed that the problem of the interaction of neutrons with a system of bound atomic nuclei may be reduced to finding some four-variable function, G(r, t), characterizing the space time correlation of pairs of atomic nuclei. The authors derive the relation between the real and imaginary parts of the function; these correlations are similar to the results obtained by Schofield. The connection between this function and the coefficient γ_{11} is also described and very simple cases are discussed. (Author)

Tarasov, L. V.
EXPERIMENTAL DETERMINATION OF THE SPECTRUM FOR THERMAL OSCILLATIONS OF CRYSTALS OF ARBITRARY SYMMETRY BY MEANS OF INCOHERENT SINGLE-PHONON SCATTERING OF COLD NEUTRONS (Ob Eksperimental'nom Opredelenii Spektra Teplovykh Koleabnii Kristallov Proizvol'noi Simmetrii s Pomoshch'yu Nekogerentnogo Odnofononnogo Rasseyaniya Kholodnykh Neitronov). [1962] [9]p. 2 refs.
Order from OTS or SLA $1.10 AEC-tr-5156

Trans. of mono. Symposium on the Inelastic Scattering of Neutrons in Solids and Liquids, Vienna, 11-14 Oct 60. Proceedings [Vienna] 1961, p. 479-483 (STI/PUB/35).

DESCRIPTORS: *Neutrons, *Neutron scattering, Neutron cross section, *Phonons, *Single crystals, Symmetry (Crystallography), Oscillation, Spectrographic analysis.
The purpose of this work is to study the relation between the cross-section of incoherent single-phonon scattering of cold neutrons and the spectrum of oscillation frequencies in crystal. It is shown that for a single crystal of arbitrary symmetry the frequency function is normally a linear combination of three scattering cross-sections, measured, generally speaking, for three random arbitrary orientations of the sample, determined in relation to its main axes. It is also shown that for a polycrystal sample of arbitrary symmetry, isotropic throughout, the scattering cross-section, correct to the Debye-Waller factor, is proportional to the frequency function. (Author)

Turchin, V. F.
SCATTERING OF NEUTRONS IN LIQUIDS (Rasseyanie Neitronov v Zhidkostyakh). [1962] [10]p. 2 refs.
Order from OTS or SLA $1.10 AEC-tr-5158

Trans. of mono. Symposium on the Inelastic Scattering of Neutrons in Solids and Liquids, Vienna, 11-14 Oct 60. Proceedings [Vienna] 1961, p. 259-264 (STI/PUB/35).

DESCRIPTORS: *Neutrons, *Neutron scattering, Neutron cross sections, Liquids, Quantum statistics.
A formula is presented for the scattering cross section of slow neutrons in a liquid in incoherent approximation. The formula, which is based on the analysis of the quantum correlation function introduced by Van Hove and has been derived in an analogous manner for crystals, is in good agreement with exact theory. (Author)

Instruments and Installations

Blokhintseva, T. D., Vasilenko, A. T. and others.
AN EIGHT LITRE HYDROGEN-DEUTERIUM BUBBLE CHAMBER IN A MAGNETIC FIELD, tr. by D. A. Nimidoff. Mar 62, 36p. 3 refs.
Order from OTS or SLA $3.60 UCRL Trans-810

Trans. of Joint Inst[itute] for Nuclear Research (USSR) P-848 [1961] 25p.

DESCRIPTORS: Hydrogen, Deuterium, *Bubble chambers, Design, Operation, Magnetic fields.

A design of an eight - litre hydrogen - deuterium chamber is described and the operating data is given. The chamber represents a metal - glass device with a vertical arrangement of its working volume. The chamber is illuminated by means of a lens. The expansion system is of bellows type. The magnetic field is 12,000 oersted in the working volume. The dead time of the chamber does not exceed 2 seconds. (Author)

Cesarano, C.
HOT CELLS, tr. by B. Rigby. 1959 [24]p. 26 refs.
UKAEA IGRL-T/R-62; [DSIR NLL] M. 1484.
Order from OTS or SLA $2.60 62-32402

Trans. of Energia Nucleare (Italy) 1957, v. 4, no. 4, p. 267-282.

DESCRIPTORS: *Nuclear physics laboratories, Laboratory equipment, *Radioactive isotopes, Handling, Containers, *Shielding, Visability, Remote control systems, *Decontamination, *Radioactive waste.

In this paper the problems connected with the choice of materials, installation and management of hot cells are reviewed.

Demirkhanov, R. A., Poroshin, O. F. and others.
A HIGH INTENSITY INJECTOR OF HYDROGEN IONS, tr. by S. Shewchuck. [1962] 10p. 3 refs.
Order from OTS or SLA $1.10 UCRL Trans-748

Trans. from mono. I[nternational] A[tomic] E[nergy] A[gency] Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, Sep 61. [Proceedings].

DESCRIPTORS: *Plasma physics, *Hydrogen, Ions, *Injectors, *Ion beams, Ion accelerators.

The report presents a description of a high intensity injector of hydrogen ions, operating at a continuous regime. A beam of hydrogen ions is obtained with a current of 275 milliamperes and a relatively high coefficient value of beam directionality R=7 A cm^2. Ion selection is done with a developed surface of the penetrating plasma with a suction voltage of 45 kv. (Author)

Dzhakov, E., Markov, A. and others.
A PULSE SCALER USING A NEW MULTI-STABLE SYSTEM (Pereschetnaya Skhenma Impul'sov s Ispol'zovaniem Novoi Sistemy Mnogikh Ravnovesnykh Sostoyanii). [1962] 10p. 7 refs.
Order from OTS or SLA $1.10 AEC-tr-5403

Trans. of mono. [International Atomic Energy Agency] Conference on Nuclear Electronics, Belgrade, 15-20 May 61. Proceedings, v. 2, 1962, p. 369-377 (STI/PUB-42).

DESCRIPTORS: *Radiation counters, *Counting methods, *Scalers, Circuits, Electromagnetic pulses, Stability, *Measuring devices (Electrical and electronic).

Skachkov, Yu. F.
CHARACTERISTICS OF SPARK COUNTERS WITH PLANE-PARALLEL ELECTRODES, tr. by Helen Basil. July 62 [11]p. 8 refs.
Order from OTS or SLA $1.60 AEC-tr-5239

Trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1961, v. 6, no. 6, p. 41-44.

DESCRIPTORS: Counting methods, *Radiation counters, Electrical discharges, *Sparks, *Electrodes, Helium group gases, Oxygen, Mixtures, Time-interval counters.

Spark counters with plane-parallel electrodes and small discharge gaps are investigated with respect to their characteristics. The counters were filled with gaseous mixtures: $He + O_2$, $Ne + O_2$, $Ar + O_2$ and $Xe + O_2$. It is shown that the time resolution of counters filled with $He + O_2$ is 10^{-11} seconds and of those filled with $Ne + O_2$, 3 10^{-11} seconds. (Author)

Trouble, M.
A METHOD OF DETECTING PLUTONIUM BY GAMMA SPECTROGRAPHY AT 17 KEV: APPLICATION OF MEASUREMENT OF RADIOACTIVE CONTAMINATION IN MAN. [1962] 5p. 1 ref.
Order from OTS or SLA $1.10 AEC-tr-5251

Trans. of mono. [Symposium of] Selected Topics in Radiation Dosimetry [Vienna, 7-11 June 60. Proceedings]. Vienna, 1961 [p. 237-241] (STI/PUB/25.).

DESCRIPTORS: *Radiological contamination, Man, *Plutonium, Fission products, Detection, *Gamma ray spectroscopy, *Radiation counters, Proportional counters, Scintillation counters, Crystal counters.

Pu^{239} emits gamma radiation in an energy range centered around 17 keV, the activity being about 0.06c per gram Pu. The emission is sufficient to allow measurement of superficial or near-surface contamination in man, sensitive enough to detect amounts of Pu much below the permissible doses. The detector used is either a proportional gas counter, or a very thin NaI(Tl) or CsI(Tl) crystal. The measurements are made in a shielded enclosure; the detector is used in conjunction with a multi-channel selector. (Author)

Vyazemskii, V. O., Lomonsov, I. I. and others.
SCINTILLATION METHOD IN RADIOMETRY, tr. by Lydia Venters. Oct 62, 414p. 549 refs.
Order from OTS $5.00 AEC-tr-5259

Trans. of mono. Stsintillyatsionnyi Metod v Radiometrii, Moscow, 1961.

DESCRIPTORS: *Radiation counters, *Scintillation counters, *Crystal counters, Alkali metal compounds, Halides, Organic substances, Plastics, Glass, Liquids, Gases, *Photomultipliers, *Electronic equipment, Amplifiers, Pulse analizers, Coincidence counters, Time interval counters, *Gamma ray spectroscopy, *Nuclear spectroscopy, *Neutron detectors, Uranium determination, *Geophysical prospecting, *Radiobiology, Carbon dating.

This book contains discussions of the basic principles of the scintillation method for recording and spectrometry of nuclear radiations, and its use in various scientific and technical fields. A great attention was given to the theory of scintillation process, phenomena in photomultipliers and characteristics of native types of photomultipliers as well as to the principles guiding the construction of the electronic measuring device used in scintillation technique. This monograph is intended for use in a wide society of specialists, who are interested in these problems or who use scintillation counters in their work. The section devoted to the scintillation process in organic substances is of interest for physicists, chemists and biologists, who work on energy migration problems in living substance. (Author

Isotope Separation

Malyusov, V. A., Orlov, V. Yu. and others.
SEPARATION OF LITHIUM ISOTOPES BY MOLECULAR DISTILLATION OF MOLTEN LITHIUM. [1962] 13p. 12 refs.
Order from OTS or SLA $1.60 AEC-tr-5133

Trans. of #Atomnaya Ener[giya] (USSR) 1961, v. 11 [no. 5] p. 435-[439].
A trans. in French is available from OTS or SLA $7.60 in 62-25656 [1962] [78]p.

DESCRIPTORS: *Lithium, Isotopes, *Isotope separation, Distillation, Distilling plants, Design.

The separation coefficient of lithium isotopes was determined by vaporization of molten metallic lithium in a singlestage apparatus. The value of the separation factor at 500°C is 1.08 ± 0.02. Investigations were conducted on the separation of lithium isotopes by molecular distillation in an 8-stage metal apparatus of the cascade type. It was shown that when the sections of the apparatus were filled with metal packings and the condensation temperature of lithium is raised to 350°C, the efficiency of a stage of the apparatus is 0.4-0.5. (Author)

Zaborenko, K. B. and Babeshkin, A. M.
THE EFFECT OF THE RECOIL ENERGY OF NUCLEAR TRANSFORMATIONS IN SOLIDS ON THE SEPARATION OF NATURAL RADIOISOTOPES (Vliyanie Energii Otdachi Yadernykh Prevrashchenii v Tverdykh Telakh na Razdelenie Estestvennykh Radioaktivnykh Izotopov). [1962] [15]p. 20 refs.
Order from OTS or SLA $1.60 AEC-tr-5159

Trans. of mono. Symposium on the Chemical Effects of Nuclear Transformations, Prague, 24-27 Oct 60. Proceedings, v. 2 [Vienna] 1961, p. 57-67 (STI/PUB/34).

DESCRIPTORS: *Isotope separation, *Minerals, *Barium compounds, Salts, *Radium, Radon, *Recoil atoms, Energy, Nuclear reactions.

The paper examines the behavior of radioisotopes in minerals, and the mechanism of the processes determining the chemical state and distribution of radioelements in the crystal lattice of minerals.

Nuclear Engineering and Power

IMPROVEMENT OF HEAT TRANSFER IN BOILING WATER REACTORS. Quarterly rept. no. 2, July-Sep 60. [1962] [13]p. Supersedes TID-12 475.
Order from OTS or SLA $1.60 EURAEC-34

Trans. of a rept. from Société Nationale d'Étude et de Construction de Moteurs d'Aviation, Suresnes (France) 26 Oct 60.

DESCRIPTORS: *Boiling water reactors, Nuclear reactors, *Heat transfer, Pressure, Fluid flow, Water, Coolants, Reactor coolants, Tests.

OPERATING EXPERIENCE WITH NUCLEAR POWER STATIONS. Review series no. 16, STI/PUB/15/16. Sep 61, 64p.
Order from National Agency for International Publications, Inc., 801 Third Ave., New York, 22, N. Y. $1.00 as IAEA SU-31.

DESCRIPTORS: *Nuclear power plants, Operation, Nuclear reactors.

Krasnoyarov, N. V.
REACTIVITY POWER EFFECTS AND REACTOR SAFETY (Moshchnostnye Effekty Reaktivnosti i Bezopasnost Reaktorov). [1962] 14p. 8 refs.
Order from OTS or SLA $1.60 AEC-tr-5223

Trans. of preprint of mono. I[nternational] A[tomic] E[nergy] A[gency] Symposium on Reactor Safety [and Hazards Evaluation Techniques] Vienna, 4-18 May 62. [Proceedings] paper no. SM-24/81.

DESCRIPTORS: *Nuclear reactors, *Reactor reactivity, *Reactor safety systems, Power coefficient of reactivity, Temperature coefficient of reactivity, Heating, Power, Dynamics, Feedback.

The article considers the role of power effects in the problem of reactor safety. An analysis is made of individual components of power effects as applied to fast reactors, particularly the BR-5. Various methods for the investigation of power effects are mentioned and compared, and the results of research on BR-5 by one of the methods are reported. The results of the measurements indicate that the role of the individual components of the power effect changes with burnup, and subsequently there existed in the BR-5 a small positive dynamic coefficient of reactivity. In large fast reactors one can expect reliable negative values of the dynamic power coefficient of reactivity. (Author)

Pinkhasik, M. S., Aristarkhov, N. N., and Karpov, A. [V.].
EXPÉRIENCE ACQUISE LORS DE L'EXPLOITATION DE B.R.5, RÉACTEUR À NEUTRONS RAPIDES, tr. by Levandowski, 14 Apr 62 [50]p. 1 ref. CEA Trans. no. R 1602 (text in French).
Order from OTS or SLA $4.60 62-33732

Trans. in French of mono. [Power Reactor Experiments, v. 1] Congrès de Vienne, 1961 [Vienna, 1962, p. 375-402].

DESCRIPTORS: *Power reactors, *Fast neutrons, Fast reactors, *Nuclear power plants, Design, Heat transfer, Reactor reactivity, Sodium, Conversion ratio, Liquid metal cooled reactors.

Saenger, E.
SHOCK WAVE PRESSURES IN HOT WATER PROPELLED FISSION ROCKETS. [1962] 12p. (figs. omitted) 7 refs.
Order from SLA $1.60 62-18323

Trans. of Raketentechnik und Raumfahrtforschung (West Germany) 1960 [v. 4] no. 2, p. 46-49.

DESCRIPTORS: *Rockets, Rocket motors, *Nuclear propulsion, Water, Atomic bombs, Explosions, *Shock waves, Pressure.

While exhaust velocities twice to thrice higher than those obtainable from optimum chemical rockets may be expected from convective fission operated rockets of the type intended for the American Rover project, hot water propelled, fission bomb operated rockets may be envisaged to yield exhaust velocities up to 10 times as high as those obtained from chemical rockets. In this thermal nuclear rocket system the working fluid water is to be heated to very high temperatures by means of successive explosions of small atomic bombs. In this case, combustion chamber dimensions are sometimes determined through the stresses in the chamber walls, due to the shock wave in the water plasma resulting from the explosion process, thus lending particular significance to the study of these prospective shock wave pressures within the atomic bomb-heated, hot water propelled, fission operated rocket. (Author)

Taube, M.
MOLTEN PLUTONIUM AND URANIUM CHLORIDES AS FUEL FOR FAST BREEDER REACTORS (Rasplavlennye Khloridy Plutoniya i Urana kak Toplivo dlya Bystrykh Reaktorov-Razmnozhitelei). [1962] [13]p. 12 refs.
Order from OTS or SLA $1.60 AEC-tr-5161

Trans. of mono. Symposium on Power Reactor Experiments, Vienna, 23-27 Oct 61. Proceedings, v. 1 [Vienna] 1962, p. 353-363 (STI/PUB/51).

DESCRIPTORS: *Breeder reactors, *Reactor fuels, *Uranium compounds, *Plutonium compounds, Chlorides, Fuzed materials, Salts, Potassium compounds, Sodium compounds, Magnesium compounds, Calcium compounds, Copper compounds, Zinc compounds, Fast neutrons, Neutron capture, Nuclear reactions, Vapor pressure, Corrosion.
The selection of fused salts components containing U (as fertile material) and Pu (as fissionable material) as liquid fuel for fast two-region breeder reactor is discussed. The suitable fused salts components are: $(UCl_3$ (or $UCl_4)$, $PuCl_3$ (or in some conditions $PuCl_4$) dissolved in binary fused eutectic containing a pair from following chlorides: KCl, NaCl, $MgCl_2$, $CaCl_2$ and also CuCl, $ZnCl_2$. (Author)

Nuclear Reactions

CONTROLLED THERMONUCLEAR FUSION RESEARCH. Review series no. 17, STI/PUB/15/17. Aug 61, 56p.
Order from National Agency for International Publications, Inc., 801 Third Ave., New York, 22, N. Y., $1.00 as IAEA SU-30.

DESCRIPTORS: *Thermonuclear reactions, Thermonuclear experiments, Plasma physics.

Groshev, L. V., Demidov, A. M. and others.
STUDIES OF (n,γ) REACTIONS WITH THE IRT REACTOR (Issledovanie Reaktsii (n, γ) na Reaktore IRT). [1962] [14]p. 3 refs.
Order from OTS or SLA $1.60 AEC-tr-5221

Trans. of mono. Symposium on Pile Neutron Research in Physics, Vienna, 17-21 Oct 60. Proceedings, Vienna, 1962, p. 261-271 (STI/PUB/36).

DESCRIPTORS: *Nuclear reactions, *Gamma-neutron reactions, Thermal neutrons, Sodium compounds, Chlorides, Cadmium, *Gamma ray spectrometers, Design, Nuclear reactors.

The paper gives a brief description of two magnetic spectrometers attached to the IRT reactor and used for studying (n,γ) reactions produced by thermal neutrons: one of the instruments is a new magnetic Compton spectrometer of high resolution, and the other is a special magnetic spectrometer for measurements of internal-conversion electron spectra. The spectra obtained with these instruments are given. (Author)

Okun, L. B.
THEORY OF WEAK INTERACTIONS: THIRTEEN LECTURES. Oct 62, 199p. 16 refs.
Order from OTS $3.00 AEC-tr-5226

Trans. of mono. Lektsii po Slabym Vzaimodeistviyam, Moscow, 1960.

DESCRIPTORS: *Nuclear reactions, Theory, *Elementary particles, Muons, Neutrinos, Electrons, *Radioactive decay, Isotopes, Parity, Electromagnetic fields, Matrix algebra.

This course is aimed at experimental physicists and has two purposes. The first is to acquaint the experimental physicist with the main conservation laws, selection rules, symmetry rules, of the theory of elementary particles, and particularly of the theory of weak interactions. The second purpose of the lectures consists of acquainting the experimentors with a calculation method, which is now used in the physics of elementary particles, so as to enable students to obtain independently the formulas for the decay probabilities or for the angular and spin correlations, and to enable them to understand how a particular formula is derived. (Author)

Petrov, Yu. V.
PROSPECTS FOR THE PRACTICAL USE OF ISOMERS (O Vozmoshnosti Prakticheskogo Ispol'zovaniya Izomerov). [1962] [9]p. 3 refs.
Order from OTS or SLA $1.10 AEC-tr-5187

Trans. of mono. Symposium on Pile Neutron Research in Physics, Vienna, 17-21 Oct 60. Proceedings [Vienna] 1962, p. 329-333 (STI/PUB/36).

DESCRIPTORS: *Nuclear isomers, *Nuclear reactions, *Neutron reactions, Neutron capture, Thermal neutrons, Fast neutrons, Neutron flux density, Uranium, Plutonium, Fission.

Reactions of slow neutrons with nuclei in the excited (isomeric) state permit the study of resonances of a compound nucleus in a different energy and spin range from that in which the resonances occur in reactions of slow neutrons with the same nuclei in the ground state. In this case the reaction (n, n') is possible when the escaping fast neutron carries off part or all of the isomer's excitation energy. For some isomers it may happen that the probability of this reaction is comparable with the probability of capture. It is hoped that under certain conditions this reaction can be used for pushing neutrons which are slowing down beyond the threshold of fission of U^{234} and Pu^{240}, and also as basis for the construction of an experimental reactor with a high flux of monoenergetic neutrons. Various possible uses of such a flux are indicated. (Author)

PHYSICS

PHYSICS BULLETIN, 1960, NO. 5: SELECTED ARTICLES. 7 Dec 60 [18]p. JPRS: 5838.
Order from OTS or SLA $1.60 61-11632

Trans. of Wu Li T'ung Pao (Chinese People's Republic) 1960, no. 5, p. 217, 223-225.

DESCRIPTORS: Physics, *Germanium, Purification, Zone melting, Glass, Cooling, Scientific organizations, Scientific research.

Contents:
Using a hard glass tube in place of quartz tube in the physical refining of germanium, by Ch'en Ch'uan-li
How we undertook a tremendous program of scientific research, by Tsou Kuang-hsing.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 65 (PHYSICS AND MATHEMATICS SERIES). 31 Jan 63 [11]p. JPRS: 17395.
Order from OTS $0.50 63-21028

Consists of abstracts of articles from the scientific and technical journals of Hungary and Poland.

DESCRIPTORS: *Abstracts, Literature, Hungary, Poland, *Physics, *Mathematics, Optical filters, Thin films, Optics, Microstructure, Tungsten compounds, Oxides, Crystal structure, Solar systems, Elementary particles, Adapters, Ferromagnetism, Gas discharges, Vapors, Interstellar matter, Magnetic fields, Stars, Sun, *Astrophysics.

Acoustics

Gershman, S. G. and Feinberg, E. L.
MEASUREMENT OF THE CORRELATION COEFFICIENT (Ob Izmerenii Koeffitsienta Korrelyatsii). Aug 61 [14]p. 11 refs. TIL/T. 4702; [DSIR] NLL M. 3490
Order from OTS or SLA $1.60 62-25344

Trans. of Akusticheskii Zhurnal (USSR) 1955, v. 1, no. 4, p. 326-337.
Another trans. is available from ASLIB, 3 Belgrave Sq., London, S. W. I, Eng. as GB131.

DESCRIPTORS: Acoustics, *Noise, *Correlation techniques, *Electronic equipment, Circuits, *Communication theory.

An instrument is evolved which is based on the use of the connection between the correlation coefficient of two noises and the probability of the signs of the instantaneous values of these noises coinciding. The output effect of the instrument is the measure of this probability. The electric circuit makes use of the transformation of the input voltages into pulses, the electronic relay, on the output of which pulses of coincidence are obtained, the averaging of these pulses and the indicator. The theory of the instrument is developed. The results of the theory are used for calibrating and evaluating the measuring errors. It is shown that the instrument may be used not merely for measurement of the correlation coefficient, but also for certain other purposes, including various measurements in the acoustic field.

Tonakanov, O. S.
FLUCTUATIONS OF SOUND WHEN PROPAGATED IN A SHALLOW LAYER OF WATER. [1962] [7]p. 12 refs. [DSIR] NLL M. 4832.
Order from OTS or SLA $1.10 62-24876

Trans. of #Akusticheskii Zhurnal (USSR) 1961, v. 7, no. 2, p. 236-241.

DESCRIPTORS: Acoustics, *Sound transmission *Underwater sound, Underwater sound equipment, Hydrophones.

Basov, N. G. and Prokhorov, A. M.
THEORY OF THE MOLECULAR GENERATOR AND MOLECULAR POWER AMPLIFIER. [1961] 8p. 4 refs. MOF B-104.
Order from OTS or SLA $1.10 62-23055

Trans. of #Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1956, v. 30, no. 3, p. 560-564. Another trans. is available from OTS or SLA $1.10 as 62-32904, USASIA Trans-1029, 28 Aug 62 [10]p.

DESCRIPTORS: Molecules, Molecular beams, *Generators, *Microwave amplifiers, *Power amplifiers, Amplifiers, Operation, Theory.

For abstract see Technical Translations 8: 1059, 1962.

Gabovich, and Romanyuk,
EINFLUSS EINES MAGNETISCHEN FELDES AUF DIE FORM DER GRENZE DES VORDRINGENDEN PLASMAS UND AUF DIE FOKUSBILDUNG DES PLASMAS (The Influence of a Magnetic Field on the Shape of the Boundary of the Advancing Plasma and on the Focal Structure of the Plasma). 8p. (text in German).
Order from TIB $1.55

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1961, [v. 31] no. 3.

DESCRIPTORS: *Magnetic fields, Plasma, Structures.

Kracik, Jiri.
THE COMPLEX CONDUCTIVITY OF PLASMA OF AN ARC DISCHARGE SUPPORTED BY A DIRECT CURRENT. May 60, 15p. 27 refs. Technical trans. F-24.
Order from OTS or SLA $1.60 60-21610

Trans. of [Ceskoslovensky Casopis pro Fysiku] 1956, [v. 6, no. 3] p. 264-276.

DESCRIPTORS: *Plasma physics, Conductivity, *Electric discharges, High frequency, Electric currents, Direct current, Electrons, Kinetic theory, Gas discharges.

An expression is sought for the complex conductivity of the plasma of an arc discharge supported by a strong d-c current for the case in which a very weak high-frequency current that does not affect the condition of the plasma passes through it. The agreement between the results found and previous notions is satisfactory. (Author)

Lovetskii, E. E. and Rukhadze, A. A.
ON THE CONVECTIVE INSTABILITY OF AN INHOMOGENEOUS PLASMA IN A GRAVITY FIELD. [1962] 15p. 6 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R61. When supply is exhausted, order from OTS or SLA $1.60, 63-10655

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. [Rept]-A-109, 1962, p. 1-13.

DESCRIPTORS: *Plasma physics, *Plasma oscillations, Stability, *Gravity, Magnetic fields, Electromagnetic waves, Electrons, Magnetohydrodynamics, Quantum statistics, Tensor analysis, Dielectric properties, Permeability.

The stability is investigated of the equilibrium state of a weakly inhomogeneous rarified magnetoactive plasma in a gravity field, with regard to the thermal motion of the particles in the plasma. It is shown that in the case of sufficiently strong magnetic fields the equilibrium state of an inhomogeneous plasma in a gravity field is always unstable as regards the exitation of electromagnetic waves propagated along the magnetic field (convective instability). (Author)

Maecker, H.
ELECTRON DENSITY AND TEMPERATURE IN THE COLUMN OF THE HIGH CURRENT CARBON ARC. [1962] 36p. 19 refs.
Order from SLA $3.60 62-18256

Trans. of Zeitschrift für Physik (West Germany) 1953, v. 136 [no. 2] p. 119-136.

DESCRIPTORS: *Plasma physics, *Electric arcs, Carbon, Electron density, Temperature, Measurement, Spectroscopy, Ionization potental.

Silin, V. P. and Gorbunov, L. M.
ON THE KINETICS OF NON-ISOTHERMAL PLASMA [AND] ADDITION TO THE ARTICLE, tr. by Sergey Shewchuck. June 62, 10p. 2 refs.
Order from OTS or SLA $1.10 UCRL Trans-833

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. Rept-A-61, 1962, 9p.

DESCRIPTORS: *Plasma physics, *Kinetic theory, Polarization, Electrons, Distribution, Statistical functions, Polynomials, Integrals, Plasma oscillations.

Silin, V. P.
OSCILLATIONS OF A WEAKLY INHOMOGENEOUS PLASMA. [1962] 26p. 4 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R60. When supply is exhausted, order from OTS or SLA $2.60, 63-10654

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. [Rept]-A-210, 1962, p. 1-23.

DESCRIPTORS: *Plasma physics, *Plasma oscillations, Oscillation, Electrons, Frequency, Stability, Electromagnetic waves, Magnetic fields, Quantum statistics

The natural oscillations of a weakly inhomogeneous plasma are studied. The dispersion equations defining the natural frequencies of these oscillations are analogous to the quasi-classical quantization rules of Bohr. The high-frequency electron oscillations of a weakly inhomogeneous plasma are investigated by means of such dispersion equations. The "quantization rules" are also used to study the spectrum of oscillations of a weakly inhomogeneous plasma confined by a strong magnetic field. Sufficient conditions for instability of the plasma are obtained and, in a number of cases, analyzed. (Author)

Taubenheim, J.
RECOMBINATION IN VERY LOW DENSITY PLASMA OF THE IONOSPHERE [Rekombination in Sehr Verdunten Plasma der Ionosphare] tr. by J. M. Sprecher. 5 Dec 60 [18]p. 20 refs.
Order from OTS or SLA $1.60 62-23846

Trans. of special reprint from mono. Probleme des Plasma in Physik und Astronomie, Berlin, 1958.

DESCRIPTORS: *Ionosphere, *Plasma physics, Electron, Density, *Recombination reactions, Ionization.

Troitskii, V. S. and Khrulev, V. V.
MEASUREMENT OF THE SPECTRAL LINE WIDTH OF A KLYSTRON GENERATOR AT A 3.2 CM. WAVELENGTH. [1961] 11p. 5 refs. MDF T 128.
Order from OTS $0.50 62-11201

Trans. of Radiotekh[nika] i Elektr[onika] (USSR) 1956, v. 1, no. 6, p. 831-837.

DESCRIPTORS: *Generators, *Klystrons, *Line spectrum, Oscillators, Frequency, Phase shifters, Noise (Radio).

The natural spectral line width of a klystron generator, equal to 0.3 - 0.8 cps, is determined. The spectra of the amplitude and frequency fluctuations of oscillations in the 2 - 25 mc band are investigated. The measurements are made by the Bershtein method. (Author)

Wang, T. C.
INFLUENCE OF FLUCTUATIONS IN THE NUMBER OF MOLECULES UPON THE FREQUENCY OF A MOLECULAR BEAM TYPE MASER OSCILLATOR [Influence des Fluctuations du Nombre des Molecules sur la Frequence d'un Maser Oscillator a Faisceau Moleculaire] tr. by Pablo Guzman Rujas. 4 Aug 60, 5p. 4 refs.
Order from OTS or SLA $1.10 62-25264

Trans. of [Journal de Physique et le Radium (France) 1960, v. 21, Apr, p. 261-263].

DESCRIPTORS: *Masers, *Microwave oscillators, *Molecular beams, Frequency, Molecules, Equations.

Weizel, W.
THE SYSTEMATOLOGY OF TYPES OF ELECTRIC ARCS. [1962] 6p. 5 refs.
Order from SLA $1.10 62-18320

Trans. of [Zeitschrift fur Technische Physik (Germany) 1943, v. 24, no. 4, p. 90-92].

DESCRIPTORS: *Plasma physics, *Electric arcs, Classification, Equations.

Content. For each gas discharge plasma 6 equations are given. From these are found the arcs, when the plasma is quasi-neutral and the carrier concentration is found from the temperature equilibrium. The discussion of the boundary condition leads to the 3 types of arc: The wall-stabilized arc, the electrode-stabilized arc and the convection-determined arc. In the first the temperature in the arc axis is determined by the tube radius and wall temperature, in the second by the electrode distance and in the third by a gas flow. Transition cases can be detected by a disturbance calculation. As an example, a convection-disturbed electrode-stabilized arc is mentioned. A condition is ascertained when this arc changes into a convection-determined flame arc. (Author)

Zheleznyakov, V. V.
NONLINEAR EFFECTS IN A MAGNETOACTIVE PLASMA. 30 Oct 62 [11]p. 8 refs. FTD-TT-61-277.
Order from OTS or SLA $1.60 63-13899

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. [Radiofizika] (USSR) 1958, v. 1, no. 5/6, p. 29-33.

DESCRIPTORS: *Plasma physics, Magnetohydrodynamics, *Electromagnetic waves, Propagation, Absorption, *Radio interference, Modulation, Amplitude modulation, Resonance, Electric fields, Magnetic fields, Frequency, Polarization, Vector analysis.

The frequency dependence of cross modulation (Luxemburg-Gorkov'skiy effect) is discussed. It is shown that in a homogeneous magnetoactive plasma, cross modulation increases as the frequency of the perturbing wave approaches values at which the absorption index of this wave rises abruptly. These values, generally speaking, do not coincide with the gyrofrequency. The conclusion concerning the "resonance" of cross modulation at the gyro-frequency in a homogeneous plasma, previously drawn in the theory of the Luxemburg-Gorkov'skiy effect, was due to not taking into account the nature of the polarization of the perturbing wave in the presence of a magnetic field. (Author)

Molecular Physics and Spectroscopy

Comte, J. le and Mathieu, J. P.
RELATIONS BETWEEN THE VIBRATION SPECTRA AND THE STRUCTURE OF ALKYL NITRATES. [1962] 28p.
Order from K-H $35.00 K-H 3189 b

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1942, v. 39, p. 57-72.

DESCRIPTORS: *Vibration, *Spectroscopy, *Nitrates, Molecular structure, *Alkyl radicals.

Duval, C. and Lecomte, J.
INFRARED ABSORPTION SPECTRA OF METAL SALTS CONTAINING THE XO_4 GROUP IN THE REGION OF THEIR DEFORMATION VIBRATIONS, tr. by Bertha P. Klenova. 7 Sep 54, 3p. TVA 3333.
Order from OTS or SLA $1.10 62-32268

Trans. of [Academie des Sciences, Paris. Compt[es] Rend[us] (France) 1954, v. 239, p. 249-251 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Metals, *Salts, Ions, Silicates, Phosphates, Sulfates, Chlorates, Vanadates, Manganates, Arsenates, Selenates, Molybdates, Iodates Tungstates, Rhenium compounds, Deformation, Vibration, *Spectra (Infrared), Absorption spectrum.

The infrared absorption spectra of metal salts, containing the groups of the XO_4 ion, for which X = Si, P, S, Cl, V, Cr, Mn, As, Se, Mo, I, W, and Re, were measured as powders between 290 and 650 cm.$^{-1}$. The absorption maxima are induced by the deformation vibrations, and their enumeration permits the study of the variations in the symmetry of XO_4. (Author)

Ewald, Heinz and Hintenberger, Heinrich.
METHODS AND USES OF MASS SPECTROSCOPY. July 62, 383p. 57 refs.
Order from OTS $4.50 AEC-tr-5080

Trans. of mono. Methoden and Anwendungen der Massenspektroskopie, Weinheim/Bergstrasse, 1953 [288p.].

DESCRIPTORS: *Mass spectroscopy, *Ion sources, Cathode ray tubes, Gas discharges, Electric discharges, Electron bombardment, *Ion beams, Focusing, Electromagnetic lenses, Detection, Fluorescent screens, Photographic plats, Counting methods, Instrumentation, Atomic weight, Determination, *Isotope separation, *Nuclear reactions, *Geologic age determination, Molecular structure, *Chemical analysis, Labeled substances.

This book is intended to give insight into the recent state of development of mass spectroscopy and into the problems and applications which have resulted in physics and related fields. It deals first of all with the theoretical and experimental prerequisites that are basic to the construction and application of mass spectrographs and gives a review of the various types of apparatus in existence. Then the principal problems of mass spectroscopy are treated: exact determination of isotopic masses and measurement of relative abundances of ions. Recently the area of further applications has undergone important and fruitful expansion, as a result of which mass spectrometers and mass spectrographs are becoming more and more in demand as aids in science and also in technology and industry. The most important of these applications and their associated problems will be gone into more thoroughly. (Author)

Fistul', V. I.
A MASS-SPECTROMETRIC METHOD OF DETERMINING THE KINETICS OF EMISSION OF GASES FROM METALS (Mass-Spektrometricheskii Metod Issledovaniya Kinetiki Vydeleniya Gazov iz Metallov) tr. by E. E. Conrad. [1962] 12p. (foreign text included) 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5280

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23, no. 12, p. 1448-1451.

DESCRIPTORS: *Mass spectroscopy, Metals, Aluminum, Copper, Gases, Hydrogen, Nitrogen, Carbon compounds, Monoxides, Oxygen, Carbon dioxide, Chlorine, Water vapor, Diffusion, Emissivity, Dynamics.

Frühling, Hans-Georg; Münch, Wolfram; and Richter, Manfred.
SUITABILITY OF THE XENON LAMP AS STANDARD LIGHT SOURCE FOR MEASUREMENTS IN RADIOMETRY AND COLORIMETRY. [1962] 32p. (figs. tables refs. omitted).
Order from SLA $3.60 62-18306

Trans. of die Farbe (West Germany) 1956, v. 5, no. 1/, p. 41-68.

DESCRIPTORS: *Xenon lamps, Measurement, Light, *Radiometers, *Colorimetry, Spectrophotometers.

Xenon high pressure lamps are charterized by radiation of a continuous spectrum of high radiance. The spectral and photometric properties as well as performance behavior during operation of different types of Osram Xenon high pressure lamps are studied with regard to suitability of these lamps for problems of measurement in the field of photometry, radiometry, colorimetry and color matching. Practical conditions of measurement are discussed. (Author)

Gribov, L. A.
METHODS OF CALCULATION IN MOLECULAR SPECTROSCOPY. 17 Jan 63 [91p. 4 refs. JPRS: 17176.
Order from OTS or SLA $1.10 63-15120

Trans. of Akademiya Nauk SSSR. Izvestiya. [Seriya Fizicheskaya] 1962, v. 26, no. 10, p. 1226-1230.

DESCRIPTORS: *Molecular spectroscopy, Mathematical analysis, Molecules, Vibration, Frequency.

Nozdrev, V. F.
APPLICATION OF ULTRA-ACOUSTICS TO MOLECULAR PHYSICS. 1962, approx. 560p.
Order from GB $22.50

Trans. of mono. [Primenenie Ul'traakustiki v Molekulyarnoi Fizike, Moscow, 1958, 456p.].

DESCRIPTORS: Molecules, *Acoustics, *Ultrasonics.

Vanyek, M. U., Bardocz, A. and Voros, T.
TEMPERATURE MEASUREMENT IN SPARK DISCHARGES. [1962] 7p. 8 refs.
Order from SLA $1.10 62-16688

Trans. of Magyar Kem[iai] Folyoirat (Hungary) 1960, v. 66, p. 483-485.

DESCRIPTORS: *Electric discharges, Sparks, Temperature, Measurement, *Line spectrum, Determination, Equations.

One of the basic problems in the study of spark discharge mechanism is the temperature measurement. In general, the high temperatures are measured by emission spectroscopy. The Ornstein-Brinkman equation (Physica 1: 797, 1934) is very useful for temperature determination from line spectra but this formula leads frequently to unreal results. This work attempts to specify the conditions under which the Ornstein-Brinkman equation is applicable.

Optics

INTERFEROMETER FOR ASSEMBLING AND ADJUSTING OF LENSES. 25 July 1962, 3p. (foreign text included). 9889/60 Japan.
Order from INT $16.00

Trans. of Japanese patent 9889/60 by Agency of Industrial Science & Technology, Japan, filed 25 sep 56.

DESCRIPTORS: *Interferometers, *Lenses, Corrections.

OPTICAL SYSTEM FOR PHASE DIFFERENCE MICROSCOPE. 1 August 1962, 5p. (foreign text included) 3093/61 Japan.
Order from INT $18.00

Trans. of Japanese patent 3093/61 by Tokyo Kohgaku Kikai co, Ltd., 180 Shimura-Honhasunuma-cho, Itabashi-ku, Tokyo, filed 2 Dec 55.

DESCRIPTORS: *Microscopes, Phase transformers, *Optical systems.

TRANSACTION OF THE CONFERENCE OF THE RESEARCH ON THE TWINKLING OF STARS: SELECTED ARTICLES. 7 Nov 62 [22]p. FTD-TT-62-1343.
Order from OTS or SLA $2.60 63-13902

Unedited rough draft trans. of mono. Soveshchanie po Issledovaniyu Mertsaniya Zvezd [held at Moscow, 1958] Moscow, 1959, p. 33-46 and 57-62.

DESCRIPTORS: *Symposia, *Stars, *Light, *Refractive index, Meteorology, Intensity, Optical equipment, Focusing, Optics, Atmosphere, Light transmission.

Anan'ev, Yu. A. and Mak, A. A.
RANGE OF VARIATION IN THE SENSITIVITY OF THE PHOTOGRAPHIC METHOD FOR RECORDING RADIATION. [1962] [10]p. 8 refs.
Order from OTS or SLA $1.10 62-18595

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1962, v. 7, no. 2, p. 128-132.

DESCRIPTORS: *Sensitivity, Radiography, *Photography, *Nuclear particles, Image converter tubes, Image intensifiers (Electronics), Measurement.

As a result of examining the variation limitations of the sensitivity of the photographic method of radiation recording, a criterion has been obtained for the characteristics of photographic materials from the viewpoint of transmitting capacity and this method has been compared with the photoelectric method. It has been shown that in the case of a preliminary intensification of the image luminance with an image converter tube, a gain in sensitivity of more than by two orders of magnitude is possible. The coefficient of luminance intensification necessary for reaching this gain has been evaluated. (Author)

Butaeva, F. A. and Fabrikant, V. A.
A MEDIUM WITH A NEGATIVE ABSORPTION FACTOR 11 Sep 62 [16]p. 8 refs. FTD-TT-62-1114. AD-286 599
Order from OTS or SLA $1.60 62-33633

Burdakova, Yu. P. and Druzhinin, V. V.
ON THE DEPENDENCE OF THE COERCIVE FORCES ON THE THICKNESS OF THE LAMINA OF IRON-SILICON ALLOY [O Zavisimosti Koertsitivnoi Sily ot Tolshchiny Listov Zhelezo-Kremnistogo Splava]. [1961] 6p. 3 refs. MDF B-105.
Order from OTS or SLA $1.10 62-23060

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 108-111.

DESCRIPTORS: *Silicon alloys, *Iron alloys, Steel, Sheets, Thickness, Single crystals, *Ferromagnetic materials.

The dependence is studied of the coercive forces on the thickness of the samples of transformer steel. A variation in the thickness of the samples is produced by rolling and etching methods. This dependence is studied also in single crystal samples for which a plane of (110) type is located in the plane of the sample or close to it. (Author)

Guillaud, Ch. and Creveaux, H.
PREPARATION AND MAGNETIC PROPERTIES OF THE FERRITES OF MANGANESE AND COBALT. [1962] 2p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18337

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1950 [v. 230, no. 13] p. 1256-1258 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Ferrites, *Maganese compounds, *Cobalt compounds, Preparation, Magnetic properties.

Along with the methods of preparation of the ferrites of manganese and cobalt, according to the precise formula (Fe_2O_3Mo) M representing a bivalent metal ion, this article discusses the ferro-magnetic characteristic of these two ferrites, and in particular their moments of magnetic saturation. (Author)

Karasik, V. R.
APPARATUS FOR PRODUCING HIGH PULSED MAGNETIC FIELDS. 15 June 59, 8p. 14 refs.
Order from OTS or SLA $1.10 62-16756

Trans. of #Pribor[y i] Tekh[nika] Eksp[erimenta] (USSR) 1959, no. 1, p. 142-145.

DESCRIPTORS: *Magnetic fields, Production, *Solenoids, Design, Magnet coils, Capacitors.

The construction is described of an apparatus for producing high, pulsed magnetic fields. A field of 3×10^5 Oe is obtained in a 0.7 cm^3 volume by the method of discharging a bank of condensers. The character of the discharge is oscillatory, with a period of 2×10^{-4} sec. The mounting of the solenoid, its production and installation are described in detail. (Author)

Unedited rough draft trans. of mono. Issledovaniya po Eksperimentalnoi i Teoreticheskoi Fiziki, Moscow, 1959, p. 62-70.

DESCRIPTORS: *Absorption, *Optics, Masers, Thermodynamics, Cesium, Vapors, Fluorescence, Probability, Helium, Mercury, Glow discharges, Gas discharges.

An investigation is made of the effect of negative absorption in the ordinary optical range. Preliminarily an analysis is made of the peculiarity of the optical properties of the medium with a negative factor of absorption. (Author)

Françon, M[aurice].
INTERFERENCE. 1962, approx. 120p.
Order from IP $2.50(paper) $4.50(cloth)

Trans. of unidentified mono., n.p., n.d.

DESCRIPTORS: *Optics, *Interference.

Rozenberg, G. V.
LIGHT DISTRIBUTION INSIDE A WEAKLY ABSORBING, SCATTERING MEDIUM AND SOME PROSPECTS OF SPECTROSCOPY. [1962] 24p. 18 refs.
Order from OTS or SLA $2.60 62-18621

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 5, no. 4, p. 440-449.

DESCRIPTORS: *Optics, Atmosphere, *Light, Scattering, Polarization, Electromagnetic waves, *Spectroscopy.

Shibanov, A.
HYPERBOLOID HAS BEEN FORMED. 12 July 62 [12]p. FTD-TT-62-869.
Order from OTS or SLA $1.60 62-32584

Unedited rough draft trans. of Izobretatel' i Ratsionalizator (USSR) 1961, no. 10, p. 20-21 and 33.

DESCRIPTORS: Optics, Light, Quantum mechanics, Lasers, Amplifiers, Generators, Masers, *Optical equipment.

Solid State Physics

SOVIET STUDIES ON CRYSTAL STRUCTURE.
30 Jan 63 [37]p. 36 refs. JPRS: 17370.
Order from OTS $1.00 63-21017

Trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1959, v. 4, p. 3-12, 71-77, 193-201.

DESCRIPTORS: *Crystal structure, Metals, Alloys, *Heat resistant alloys, Steel, Fracture (Mechanics), *Crystal lattice defects, Creep, Nickel alloys, Dislocations, Aluminum alloys, Copper alloys, *X-ray diffraction analysis, X-rays, Scattering.

Contents:
The role of separation surfaces in the delayed fracture of metals, by I. A. Oding and others
Effect of crystal structure on certain properties of metals and alloys, by I. Ya. Dekhtyar and others
Experimental observation of sources of dislocations on the basis of separations, by V. G. Rakin and N. N. Buinov
Study of submicroscopic defects in metals by the method of X-ray beam scattering at low angles, by S. N. Zhurkov and A. I. Slutskar.

Ablova, M. S.
ANISOTROPY OF THE MICRO-HARDNESS OF GERMANIUM (Anizotropia Mikrotverdosti Germaniya) tr. by Zanis Stuberovskis. 2 Dec 61 [15]p. 17 refs. E-T-R-61-4; AD-276 225.
Order from OTS or SLA $1.60 62-25104

Trans. of #Fizika Tverdogo Tela (USSR) 1961, v. 3, p. 1815-1820.

DESCRIPTORS: *Metallurgical analysis, *Microanalysis, *Germanium, Hardness, Surface properties, Test methods, Measurement.

Relations of the degree of micro-hardness to the orientation of monocrystal of germanium came to light when a great number of measurements of micro-hardness of germanium had been carried out on the apparatus PMT-3 and the data received correspondingly treated. Different ways of treatment of the surface have influence on the degree of micro-hardness of germanium. (Author)

Aliev, B. D., Abdulaev, G. B., and Aliev, G. M.
ELECTRICAL PROPERTIES OF SELENIUM WITH ADMIXTURE OF BISMUTH (Elektricheskie Svoistva Selena s Primes'yu Vismuta) tr. by Zanis Stuberovskis. 2 Dec 61 [12]p. 18 refs. E-T-R-61-15; AD-276 707.
Order from OTS or SLA $1.60 62-25103

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR, Baku. Izvestiya: Seriya Fiziko-Matematicheskikh i Tekhnicheskikh Nauk, 1960, no. 2, p. 57-62.

DESCRIPTORS: *Selenium *Bismuth, *Chemical impurities. Electrical conductance, Temperature, Thermoelectricity.

Andrievskii, A. I., Karelin, N. N. and Rvachev, A.I.
DIE PHOTOELEKTRISCHEN EIGENSCHAFTEN VON KUPFEROXYDUL-EINKRISTALLEN (The Photoelectric Properties of Cuprous Oxide Monocrystals). (text in German).
Order from TIB $1.30

Trans. of Politekhnichnyi Instytut, Lvov. Nauchnye Zapiski: Seriya Fizicheskaya (USSR) 1958, v. 57, no. 2, p. 133-137.

DESCRIPTORS: *Photoelectric effects, Oxides, *Copper compounds, *Crystals.

Boltaks, B. I., Vasenin, F. N., and Salunina, A. E.
ELECTRIC AND THERMOELECTRIC PROPERTIES OF PARTIALLY REDUCED (BLUE) TITANIUM DIOXIDE. [1961] 19p. MDF B 134.
Order from OTS or SLA $1.60 62-23128

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1951, v. 21, no. 5, p. 532-546.

DESCRIPTORS: *Titanium compounds, *Dioxides, Reduction, Electrical properties, Thermoelectricity, *Semiconductors, *Color centers.

Results of measuring the specific electric conductivity and the thermoelectromotive force in a wide temperature range on samples of TiO_2 of various degrees of reduction are presented. Attempts are made to explain the results we obtained on the basis of modern conceptions of the semiconductor conductivity mechanism. (Author)

Bykov, V. N., Golovkin, V. S., and Levkin, V. A.
THE MAGNETIC STRUCTURE OF CHROMIUM (K Voprosu Magnitnoi Strukture Khroma). [1962] [7]p. 2 refs.
Order from OTS or SLA $1.10 AEC-tr-5188

Trans. of mono. Symposium on Pile Neutron Research in Physics, Vienna, 17-21 Oct 60. Proceedings [Vienna] 1962, p. 429-431 (STI/PUB/36).

DESCRIPTORS: *Single crystals, *Chromium, Crystal structure, Magnetic properties, Models (Simulations), Neutron diffraction analysis.

A study of the magnetic structure of chromium was made using neutron diffraction by single crystals. The existence of new splittings of the superstructure peaks was demonstrated. The results obtained are in agreement with the magnetic structure model proposed by Corliss, Hastings and Weiss This model is discussed. (Author)

Feofilov, P. P.
ABSORPTION UND LUMINESZENZ VON ZWEIWERTIGEN IONEN SELTENER ERDEN IN KRISTALLEN DES KUENSTLICHEN UND DES NATUERLICHEN FLUORITS (Absorption and Luminescence of Bivalent Ions of Rare Earths in Crystals of Synthetic and Natural Fluorspar). 12p. (text in German).
Order from TIB $2.10

Trans. of Optika i Spektroskopiya (USSR), 1956, v. 1, no. 8 [p. 992-999].
Another trans. is available in English from OTS $0.50 as 62-11557, MDF F-127 [1960] 9p.

DESCRIPTORS: *Absorption, *Luminescence, *Rare earths, Ions, Crystals, *Fluorspar.

Frantsevych, I. M., Kalynovych, D. F. and others.
THE MIGRATION OF SOLID METAL SOLUTION COMPONENTS IN A CONSTANT ELECTRIC FIELD, I-III, tr. by F. Lachman. Jan 62 [37]p. 33 refs. AERE Trans 889.
Order from OTS or SLA $3.60 62-25558

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1958, v. 3, no. 1, p. 124-134; no. 1, suppl, p. 64-67; no. 4, p. 552-559.

DESCRIPTORS: Alloys, *Heat resistant alloys, *Iron alloys, *Carbon alloys, *Chromium alloys, *Molybdenum alloys, *Tungsten alloys, Atoms, Motion, Electric fields.

Kolesnik, L. I.
RECOMBINATION OF DISLOCATION IN GERMANIUM. 29 Jan 63, 9p. 11 refs. JPRS: 17348.
Order from OTS $0.50 63-21036

Trans. of #Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 6, p. 1449-1454.

DESCRIPTORS: *Germanium, *Crystal structure, Dislocations, Deformation, Electrical conductance, Temperature.

Kristofel, N. N.
THE INFLUENCE OF THE TYPE OF HOST CRYSTAL STRUCTURE UPON THE SPECTRAL CHARACTERISTICS OF PHOSPHORS, tr. by Evelyn Conrad. [1962] 28p. 31 refs.
Order from OTS or SLA $2.60 AEC-tr-5311

Trans. of Akad[emiya] Nauk Eston[skoi] SSR [Tallinn]. Inst[itut] Fiz[iki] i Astron[omii]. Trudy, 1961, no. 17, p. 3-26.

DESCRIPTORS: *Phosphors, *Luminescence, Spectrographic analysis, Crystals, Cesium compounds, Potassium compounds, Sodium compounds, Chlorides, Thallium, *Crystal structure, Impurities.

The result of a concrete calculation carried out for KCl-Tl does not convey the changes observed in the spectra of this phosphor during the transition from a NaCl-type host crystal to one of the CsCl type. The problem of shifts in the maxima of spectral bands is discussed. The Jahn-Teller effect is examined in the case of a luminescence center in a host crystal of the CsCl type. The adiabatic potential minima correspond to the ion configurations of symmetry D_{3h} and D_{2h}, the first being the equilibrium ones. The difference in the corresponding spectral effects for centers of both structures renders their identification possible. (Author)

Mackevich, T. L. and Krachino, T. V.
THERMOELEKTRONEN-EMISSION EINIGER SCHWERSCHMELZBARER VERBINDUNGEN (Thermoelectronic Emission of some Compounds Difficult to Melt). (text in German).
Order from TIB $1.30

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1962, v. 32, no. 2, p. 220-223.

DESCRIPTORS: *Field emission, *Electrons, Intermetallic compounds, Thermionic emission.

Martynovski, V.
EXPERIMENTELLE UNTERSUCHUNG EINES HALBLEITER-WASSERKUEHLERS (Experiments with a Semiconductor-Water Cooler). (text in German).
Order from TIB $1.30

Trans. of Kholodil'naya Tekhnika (USSR) 1960, [v. 37] no. 4, p. 13-16.

DESCRIPTORS: *Semiconductors, *Water coolers.

Nagaev, E. L.
CONDUCTION MECHANISM IN SEMICONDUCTORS WITH LOW MOBILITY. [1962] 7p. 13 refs.
Order from OTS or SLA $1.10 AEC-tr-5037

Trans. of #Fiz[ika] Tverdogo Tela (USSR) 1961, v. 3, no. 9, p. 2567-2572.
Another trans. is available from ATS $10.50 as ATS-64P58R [1962] 6p.

DESCRIPTORS: *Semiconductors, Electrons, *Electrical conductance, Theory, Crystals, Models (Simulations).

A theoretical analysis is given of the conduction mechanism in semiconductors with low mobility. It is demonstrated that the use of the right linear combination, that is, the description of an electron by wave functions spread over the whole crystal, permits obtaining a more correct exponential temperature dependence of mobility in the case of an ideal crystal.

Platonov, P. A.
RELAXATION OF ELASTIC STRESS IN MATERIALS UNDER THE ACTION OF RADIATION, tr. by R. Berman. [1962] 20p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5257

Trans. from mono. Symposium on Radiation Damage on the Solid State and Reactor Materials, Venice, n.d. [Proceedings].

DESCRIPTORS: *Neutron bombardment, *Radiation effects, Materials, *Nickel, *Tungsten, Chromium alloys, Nickel alloys, Iron, Zirconium, Molybdenum, Stainless steel, Graphite, Stresses, Elasticity, *Creep.

Experiments are described on the relaxation of elastic stresses in a series of materials (Ni, W, Mo, etc.) under neutron irradiation. It is shown that irradiation to 10^{19} to 10^{20} nvt at temperatures of 120° to 140°C causes an observable relaxation in the majority of materials. It is shown that the relaxation under irradiation is slightly dependent on temperature and on the stress applied. Radiation-induced relaxation has been observed to cause up to 70% recovery under irradiation The after-effect tends to be reduced with an increase in radiation dose. In Ni and W, the kinetics were investigated, throwing some light on the mechanism of radiation-induced relaxation. (Author)

Rudnitskaya, E. S.
FUNDAMENTALS OF THE CRYSTALLOGRAPHY OF CORUNDUM [Osnovnye Svedeniya o Kristallografii i Strukture Kristallov Korunda] tr. by B. W. Kuvshinoff. 2 Oct 62, 9p. 6 refs. APL/JHU TG 230-T337.
Order from OTS $0.50 63-11507

Trans. of Akademiya Nauk SSSR. Institut Kristallografii. Trudy, 1953, v. 8, p. 13-20.

DESCRIPTORS: *Aluminum compounds, Oxides, *Corundum, Ruby, Sapphires, *Crystal structure, Lattices, Symmetry (Crystallography), X-ray diffraction analysis.

Shotov, A. P.
UEBER DIE ABHÄNGIGKEIT DES ELEKTRISCHEN DURCHSCHLAGS BEI p-n-UEBERGÄNGEN VON DER KRISTALLOGRAPHISCHEN RICHTUNG (On the Dependence of Electric Breakdown with p-n-Transitions of the Crystallographic Direction). (text in German).
Order from TIB $1.55

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei [v. 2, Moscow] 1959, p. 91-95.

DESCRIPTORS: Electricity, *Crystals.

Silin, V. P.
ON THE THEORY OF THE COLLECTIVE DESCRIPTION OF THE INTERACTION OF ELECTRONS IN A SOLID. [1962] 14p. 20 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R6. When supply is exhausted, order from OTS or SLA $1.60, 63-10650

Trans. of Fizika Metallov i Metallovedenie (USSR) 1956, v. 3, no. 2, p. 193-199.

DESCRIPTORS: *Electrons, *Solids, Metals, *Quantum mechanics, *Quantum statistics, Elementary particles.

Some results are set forth associated with obtaining kinetic equations for electrons that take into account the presence of spin. In this connection, the correlation of particles due to their indistinguishability is also taken into account. The equations found are utilized to evaluate the role of exchange effects arising due to taking into account the indistinguishability of particles. (Author)

Suchet, J. P.
ATOMIC RADII, ELECTRONEGATIVITIES AND ACTIVATION ENERGIES IN MINERAL SEMICONDUCTOR COMPOUNDS. [1962] 38p. (figs. omitted) 26 refs.
Order from SLA $3.60 62-18279

Trans. of Phys[ics and] Chem[istry of] Solids (U. S.) 1960, v. 16 [no. 3/4] p. 265-278.
Other translations are available from SLA $2.60 as 62-14461 [1962] [22]p. and $1.60 as 62-16207 [1962] 16p.

DESCRIPTORS: *Semiconductors, Inorganic substances, Minerals, *Atomic properties, *Atomic radii, Atomic orbitals, Excitation, Resonance, Energy, Intermetallic compounds, Equations, Tables.

Szabo, P.
THE DEMONSTRABILITY OF THE CRYSTAL-STRUCTURE DISORDERS OF FINE CRYSTALLINE CARBONS. [1962] 6p.
Order from ATS $11.75 ATS-55P65H

Trans. of Magy[ar] Tud[omanyos] Akad[emia] Koz[ponti] Fiz[ikai] Kut[ato] Int[ezetenek] Kozlemen[yei] (Hungary) 1959, v. 7, no. 5, p. 296-301.

DESCRIPTORS: *Crystal structure, Deformation, Crystals, *Carbon, Lattices.

Szabo, P. and Kren, E.
THE ORIENTATION OF LARGE SINGLE CRYSTALS PREPARED FOR THE PURPOSE OF NEUTRON-MONOCHROMATIZATION. [1962] 9p.
Order from ATS $15.75 ATS-56P65H

Trans. of Magy[ar] Tud[omanyos] Akad[emia] Kozp[onti] Fiz[ikai] Kut[ato] Int[ezetenek] Kozlemen[yei] (Hungary) 1959, v. 7, no. 6, p. 366-373.

DESCRIPTORS: *Nuclear radiation spectrometers, *Crystals, Chromatography analysis.

Szabo, P.
REPORT ON THE RESULTS OBTAINED IN CONNECTION WITH OUR PREPARATIONS FOR THE STUDY OF NEUTRON DIFFRACTION. [1962] 5p.
Order from ATS $8.95 ATS-54P65H

Trans. of Magy[ar] Tud[omanyos] Akad[emia] Koz[ponti] Fiz[ikai] Kut[ato] Int[ezetenek] Kozlemen[yei] (Hungary) 1960, v. 8, no. 4, p. 189-193.

DESCRIPTORS: Preparation, *Neutron diffraction analysis.

Vasil'ev, V. P.
MEASUREMENT OF DIFFUSION COEFFICIENTS BY THE CONTINUOUS MEASUREMENTS METHOD. [1961] 5p. 6 refs. MDF V-123.
Order from OTS $0.50 62-11575

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 110, no. 1, p. 61-63.

DESCRIPTORS: *Barium, *Strontium, *Calcium, *Diffusion, Vacuum apparatus, Least squares method.

A method is presented which permits the diffusion coefficients of such metals as barium, strontium and calcium to be measured without removing the sample from the vacuum instrument.

Theoretical Physics

Gutman, I. I.
GRAVITATIONAL-WAVE RADIATION. 28 Aug 62 [5]p. 3 refs. FTD-TT-62-1156; AD-286 610.
Order from OTS or SLA $1.10 62-33631

Unedited rough draft trans. of [Akademiya Nauk Uzbekskoi SSR, Tashkent]. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk, 1961, no. 5, p. 90-91.

DESCRIPTORS: *Gravity, *Relativity theory.

An invariant expression is derived for a stream of gravitational energy, for which a general covariant generalization of the integral law of energy conservation is made and a covariant expression for the Poynting vector is introduced. (Author)

Lykov, A. [V.] and Mikhailov, Yu. [A.].
THEORY OF ENERGY AND MASS TRANSFER, tr. by William Begell. 1962, 325p.
Order from Prentice-Hall, Inc., Englewood Cliffs, N. J. $12.00

Trans. of mono. [Teoriya Perenosa Energii i Veshchestva, Minsk, 1959, 327p.].

DESCRIPTORS: *Mass transfer, Theory, *Heat transfer, Kinetic theory, Energy.

Ornstein, L. S.
ARC TEMPERATURE. [1962] [8]p. (figs. omitted) 10 refs.
Order from SLA $1.10 62-18303

Trans. of Physik[alische] Zeitschrift (Germany) 1931, v. 32, p. 517-520.

DESCRIPTORS: *Electric arcs, *High temperature research, Gas discharges, Atomic spectroscopy.

Sarychev, V. M.
ISOTHERMAL ACCELERATION OF A ONE-DIMENSIONAL PLASMA FLOW IN EXTERNAL TRANSVERSE HOMOGENEOUS MAGNETIC AND ELECTRICAL FIELDS. 20 Sep 62 [8]p. 3 refs.
FTD-TT-62-1186; AD-287 694.
Order from OTS or SLA $1.10 63-13215

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1962, no. 1, p. 12-14.

DESCRIPTORS: *Plasma physics, *Plasma jets, Acceleration, Magnetic fields, Electric fields, Equations of motion.

Assuming the applicability of one-dimensional equations of continuous media, isothermal acceleration of plasma in external transverse homogeneous magnetic and electrical fields are considered in two particular cases: (a) with constant current density along the channel and (b) in a channel with a constant angle of expansion. Isothermal acceleration of plasma in a thermal jet is also considered. An investigation is made for two forms of the dependence of the conductivity of plasma on its density. (Author)

ELECTROLYTIC DEVICE ATTACHED BY A HEAT-SHIELD APPARATUS. 1 August 1962, 4p.(foreign text included). 6851/55 Japan.
Order from INT $15.50

Trans. of Japanese patent 6851/55 by Shin-ichi Tokumoto of 2-14 Fujimicho, Chiyoda-ku, Tokyo, filed 24 Nov 53.

DESCRIPTORS: Installation, Heat production, *Heat transfer, Shielding, Electrolytes.

Danilovskaya, V. I.
ON A DYNAMICAL PROBLEM IN THERMOELASTICITY (Ob Odnoi Dinamicheskoi Zadache Termouprugosti). [1962] [11]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 62-18563

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1952, v. 16 [no. 3] p. 341-344.

DESCRIPTORS: *Elasticity, Mathematical analysis, Temperature.

Danilovskaya, V. I.
TEMPERATURE STRESSES IN AN ELASTIC HALF-SPACE ARISING AS A CONSEQUENCE OF THE SUDDEN HEATING OF ITS BOUNDARY. [1962] [9]p. (foreign text included) 1 ref.
Order from OTS or SLA $1.10 62-18562

Trans. of Priklad[naya] Mat[ematika] i Mekh[anika] (USSR) 1950, v. 14 [no. 3] p. 316-318.

DESCRIPTORS: *Elasticity, Mathematical analysis, Temperature.

Moizhes, B. Ya., Petrov, A. V. and Shishkin, Yu. P.
UEBER DIE WAHL EINES OPTIMALEN SYSTEMS EINES KASKADEN-THERMOELEMENTS. (Selection of the Optimal System of a Cascade Thermocouple). (text in German).
Order from TIB $2.95

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1962, v. 32, no. 4, p. 461-472.

DESCRIPTORS: *Thermocouples.

Morozov, V. G.
AN EXPERIMENTAL INVESTIGATION OF THE CESSATION OF FILM BOILING OF A LIQUID ON A SUBMERGED HEATING SURFACE. Jan 63 [4]p. 15 refs.
Order from ICE in v. 3, no. 1 $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 4, p. 15-[19].
Another trans. is available from ATS $9.75 as ATS-24P62R [1962] 6p.

DESCRIPTORS: *Heaters, Surfaces, Boiling, Heat transfer, Methanols, Propanols, Ethanols, Carbon tetrachloride, *Film boiling, Nucleate boiling, *Chemical engineering.

Perel'man, T. L.
ABOUT HEAT EXCHANGE IN A LAMINAR CURRENT FLOWING IN A TUBE. Oct 62 [9]p. 11 refs. FTD-TT-62-1233; AD-288 522.
Order from OTS or SLA $1.10 63-13594

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 4, p. 43-48.

DESCRIPTORS: *Heat transfer, Pipes, Fluid flow, Viscosity, Laminar boundary layer, Thermal conductivity, Partial differential equations, Integration, Integral equations.

A joint solution is discussed for the equations of heat conduction by a liquid flowing in a tube and by the walls of the tube.

Polikarpov, D. P. and Bakhman, N. N.
FLAME PROPAGATION ALONG THE CONTACT SURFACE BETWEEN A METAL AND A SOLID OXIDIZING AGENT. Jan 63, 5p. 5 refs.
Order from ICE in v. 3, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 7, p. 11-[17].

DESCRIPTORS: *Flame propagation, Oxidizers, Metals, Aluminum, Tungsten, Combustion, *Chemical engineering.

Selecki, Anatol and Blum, Aleksander.
AN I--x DIAGRAM FOR A WATER VAPOR--HYDROGEN SYSTEM. 13 Aug 62 [9]p. 2 refs. FTD-TT-62-1052; AD-284 085.
Order from OTS or SLA $1.10 62-33405

Unedited rough draft trans. of Khimicheskaya Promyshlennost' (USSR) 1960, no. 5 [p. 411-413].

DESCRIPTORS: *Water vapor, *Hydrogen, Thermodynamics, Humidity, Temperature, Viscosity, Diffusion, Mixtures, Moisture.

The water vapor-hydrogen oblique-coordinate diagram is plotted for a constant pressure of 760 mm Hg on the basis of the equations of state of ideal gases in the temperature range from 0 to 100° and in the range of moisture contents from 0 to 1.8 kg per kg of dry hydrogen. Plotted on the diagram are the lines of constant temperature, constant heat content (I), constant moisture content (x), constant relative humidity, and the lines of constant temperature of a wet thermometer (psychrometric lines).

Vishnev, I. P. and Elukhin, N. K.
ON THE PROBLEM OF HEAT EXCHANGE DURING LIQUID BOILING IN TUBES (K Voprosu Teploobmena pri Kipenii Zhidhosti v Trubakh) tr. by Sergey Shewchuck. 23 June 61 [14]p. (foreign text included) 7 refs.
Order from OTS or SLA $1.60 UCRL-Trans-677(L)

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 5, p. 74-80.

DESCRIPTORS: Oxygen, Nitrogen, *Boiling, Film boiling, Liquids, *Heat transfer, Liquefied gases, Pressure, Thermodynamics.

The heat transfer factor for liquids boiling in tubes depends on their overall dimensions when length/diameter >80. Heat transfer during boiling of a liquid in various conditions can be calculated from the reduced vapour rate. For the analysis of heat transfer during boiling, a criterial equation is given. From this criterial relationship a calculation formula is obtained for the determination of heat transfer during boiling of liquids in tubes and in large volume. (Author)

Zotikov, I. A. and Bronskii, L. N.
AN EXPERIMENT STUDY OF HEAT TRANSFER DURING THE MELTING OF A METAL AND IN THE CASE WHEN A MOLTEN METAL IS INJECTED THROUGH A POROUS WALL IN A SUPERSONIC STREAM. Oct 62 [3]p. 8 refs.
Order from ICE in v. 2, no. 4, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 4, p. 10ff.

DESCRIPTORS: *Heat transfer, Liquid metals, Metals, Melting, Injection, Supersonic flow, Porous materials, Films, Thermal conductivity, *Chemical engineering.

Wave Propagation

Al'pert, Ya. L., Dobryakova, F. F. and others.
ON THE RESULTS OF DETERMINING THE ELECTRON CONCENTRATION OF THE OUTER REGIONS OF THE IONOSPHERE BY MEANS OF OBSERVATIONS ON THE RADIO SIGNALS OF THE FIRST SATELLITE. 2 Sep 58, 9p. 6 refs.
Order from OTS or SLA $1.10 62-18809

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 120, no. 4, p. 743-746.

DESCRIPTORS: Satellites (Artificial), Radio signals, *Ionospheric propagation, Electron density, Cosmic rays.

Briefly described are the results of observations on radio signals of the satellite, based on determining the instants of its "radio rise" and "radio set" Data on the distribution of the electron concentration N of the ionosphere above its maximum N_m and the preliminary reasoning on the properties of the interplanetary gas resulting therefrom are given. (Author)

Armand, N. A.
FLUCTUATIONS OF ATMOSPHERIC THERMAL RADIATION AT CENTIMETER AND MILLIMETER WAVELENGTHS. [1962] 22p. 10 refs.
Order from OTS or SLA $2.60 62-16690

Trans. of #Radiotekhnika i Elektronika (USSR) [1961, v. 6] no. 12, p. 1961-1973.

DESCRIPTORS: *Thermal radiation, Atmosphere, Absorption, Meteorology, Radio waves, *Electromagnetic waves, Statistical functions, Antennas, Brightness, Atmospheric transmission.

Computation formulae are obtained for the dispersion of the brightness temperature of an antenna in the case of a cloudless atmosphere, and in the case where a statistically uniform cloud layer is present in the atmosphere. Calculations for the angular correlation of atmospheric thermal radiation are carried out. Results show that the relative fluctuations of brightness temperature of an antenna recording atmospheric thermal radiation are of the order of 10^{-2} to 10^{-3}, proportional to the fluctuation intensity of the absorption coefficient, and they decrease as the angle of position is reduced. These fluctuations increase sharply when clouds are present in the atmosphere. The angular radius of correlation both in azimuth and in angle of position increases with an increase in angle of position.

Dnestrovskii, Yu. N. and Kostomarov, D. P.
THE PROPAGATION OF ELECTROMAGNETIC WAVES IN PLASMA ACROSS AN EXTERNAL MAGNETIC FIELD. 13 Sep 62 [16]p. 3 refs. FTD-TT-62-1187; AD-287 699.
Order from OTS or SLA $1.60 63-13212

Unedited rough draft trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) [1962] v. 2, no. 1, p. 97-106.
Another trans. is available from OTS or SLA $1.60 as 62-32104; AID-62-102, 11 July 62 [15]p.

DESCRIPTORS: *Electromagnetic waves, Propagation, *Plasma physics, Electrons, Linear systems, Partial differential equations, Density.

A study is made of the propagation of electromagnetic waves in a direction perpendicular to the external magnetic field. By means of the method of successive approximations, the theorem of the existence and uniqueness of the solution for the problem is proved. The solutions of the problem of the excitation of waves by extraneous currents and the problem with starting conditions are formed by means of the method of integral transformations. In spite of the presence of complex roots in the appropriate dispersion equation, the transfer of energy neither from the plasma to the electromagnetic field nor vice versa will occur at the stage of a steady-state regime upon propagation of waves across an external magnetic field.

Holzwarth, H.
SINGLE-SIDEBAND MODULATION IN DIRECTIONAL RADIO. [1962] 15p.
Order from SLA $1.60 62-16595

Trans. of Nachrichtentechnische Fachberichte (West Germany) 1960, v. 19, p. 86-91.

DESCRIPTORS: Radio signals, *Radio broadcasting, *Frequency modulation, Modulation, Radio interference, Noise (Radio), *Sidebands, Voice communication systems, Communication systems.

Ostrovskii, L. A.
ON THE GEOMETRICAL OPTICS APPROXIMATION FOR WAVES IN TRANSMISSION LINES WITH VARIABLE PARAMETERS (O Priblizhenii Geometricheskoi Optiki dlya Voln v Liniyakh Peredachi s Peremennymi Parametrami) tr. by Zanis Stuberovskis. 4 Jan 62 [25]p. 9 refs. E-T-R-62-13; AD-276 224.
Order from OTS or SLA $2.60 62-32105

Trans. of #Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1961, v. 4, no. 2, p. 293-305.

DESCRIPTORS: *Electromagnetic waves, *Dielectric properties, Transmission lines, Plasma physics, Magnetic fields, Wave transmission, Optical analysis, Translations.

An examination is made of the propagation of electromagnetic waves in dispersive systems with variable parameters: in a waveguide whose dielectric and magnetic permeabilities depend on time and the longitudinal coordinate, and in a neutral plasma with a variable electron concentration. It is shown that the fields in both cases can be described by a second order partial differential equation with variable coefficients. The investigation is made by successive approximations. The amplitude and frequency change of the wave in geometrical optics approximation are examined. The results obtained are illustrated by two particular examples. (Author)

Tamm, K. and Weis, O.
WAVE PROPAGATION IN INFINITELY EXTENDED DISCS AND IN DISC STRIPS. [1962] 25p. 4 refs.
Order from SLA $2.60 62-14437

Trans. of Acustica (Switzerland) 1961, v. 11 [no. 1] p. 8-17.

DESCRIPTORS: *Mechanical waves, *Wave transmission, Distortion, Reflection, Attenuation, Velocity, Disks.

An analysis shows that the same wave types occur in disks as in the case of secondary waves with plane distortion field. In disks the dilatational wave that is without rotation in xyz is replaced by the extensional plate wave, free of rotation only in xy, which formally has the same properties in disks as the dilatational wave in an infinite medium. As a secondary wave, the extensional plate wave is of course a combination of a shear wave and a dilatational wave. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 58 (GENERAL SERIES). 28 Jan 63 [17]p. JPRS: 17318.
Order from OTS or SLA $1.60 63-15380

Consists of abstracts of articles from the scientific and technical journals of Yugoslavia.

DESCRIPTORS: *Abstracts, Literature, Yugoslavia, Medical personnel, Personnel, Symposia, *Science, Medicine, Language, Social sciences, Mathematics, Geography, Engineering, Anthropology.

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY TRANSLATIONS NO. 14. 13 Dec 62 [66]p. JPRS: 16659.
Order from OTS or SLA $6.60 63-13537

Trans. of Lin Yeh K'o Hsüeh (Chinese People's Republic) 1962, no. 1, p. 53-58, 67-72, 74-79; and from Kuang Ming Jih Pao (Chinese People's Republic) 1962, 5 Oct, p. 2; 18 Oct, p. 2.

DESCRIPTORS: Science, *Marine biology, *Permafrost, *Trees, Growth, *Bamboo, Paper industry, *Wasps, *Plants, Diseases.

Contents:
Numerous aquatic products found in Gulf of Peichli, by Li Cheng-chieh and Hung Min-sheng
Frozen earth research and its significance, by Tung Po-liang
The effect of erythromycin on the growth of poplar trees by Chen Yung-mi
Determination of fiber in twelve species of bamboo grown in our country, by Chin Tzu-chen and Li Cheng-li
Using parasitic wasps to control sung-mao-ch'ung (pine caterpillar) by Peng Chao-hsien
Initial study on yu-ch'a (an oil-bearing crop) anthracnose.

SCIENTIFIC ACTIVITIES IN COMMUNIST CHINA. 17 Jan 63 [77]p. JPRS: 17174.
Order from OTS or SLA $7.60 63-15112

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1956, no. 5, p. 93-94; no. 9, p. 90-91; no. 10, p. 72-76; Hsin Hua Pan Yueh K'an (Chinese People's Republic) 1957, no. 4, p. 119-122; no. 5, p. 57-58; Pei Ching K'uang Yeh Hsüeh Yüan Hsüeh Pao (Chinese People's Republic) 1959, no. 2, p. 10-18.

DESCRIPTORS: *Scientific research, *China, Symposia, Physiology, Pharmacology, Germanium, Biology, Scientific personnel, Awards, Minerals, Metals.

Contents:
Chinese Society of Physiological Science holds the Congress of Delegates (no. 13)
Chinese Pharmacological Society holds discussion conference on papers written, by Lin Ch'i-shou
Problems concerning the solution of the raw material problem of China's germanium industry, by Lu Hsiang
On basic research in biology, by Li Ju-ch'i
China Academy of Sciences confers 1956 annual science awards in the natural sciences
Summary of 1958 scientific and technical work, by Wang T'ai-k'uei
Communist China's first awards in science (reprint of a newspaper editorial)
An explanation of selecting 1956 science awards (for natural science) of the Chinese academy of sciences
Central-south mineralogy and metallurgy institute holds discussions, by Hu Wei-po
Specialists are needed in every line (reprint of a newspaper editorial).

SCIENTIFIC RESEARCH INSTITUTES OF THE USSR, 8TH ED. June 62, 360p.
Order from OTS $1.50 60-21926, rev. 8

DESCRIPTORS: Scientific research, *Scientific organizations, *Directories.

The publication is divided into three main sections, listing institutes alphabetically by Russian name, keyword, and abbreviated name. The first two sections include abbreviated names and addresses when available, but in the third section addresses are omitted for the sake of brevity. A supplement, listing the institutes of the various Academies of Sciences, has been added to this issue. Here, the institutes are arranged alphabetically under their respective academies, further subdivided into departments or territorial branches, as applicable. Abbreviated names are included when available. The supplement contains 575 institutes, of which 325 do not appear elsewhere in this publication.

SMALL-SIZED CAMERA. 25 Juli 1962, 6p. (foreign text included). 18930/61 Japan.
Order from INT $23.00

Trans. of Japanese patent 18930/61 by Seconic Co. Ltd., 14 Kanda-Asahi-cho, Chiyoda-ku, Tokyo, filed 13 Febr 58.

DESCRIPTORS: *Cameras, *Miniature cameras.

SOVIET SCIENTIFIC ACTIVITIES. 30 Jan 63 [29]p. JPRS: 17376.
Order from OTS $0.75 63-21018

Trans. of Ukrains'kyi Fizychnyi Zhurnal (USSR) 1962, v. 7, no. 4, p. 448-454; Sovetskaya Antarkticheskaya Ekspeditsiya, 1955- (USSR) n.d., v. 16, p. 323-328; Akademiya Nauk Kazakhskoi SSR, Alama Ata. Vestnik, 1962, v. 18, no. 6(207) cover and unnumbered pages.

DESCRIPTORS: *Symposia, *Elementary particles, *Field theory, *Scientific personnel, Personnel, Scientific research.

Contents:
All-Union Conference on Elementary Particle Theory (no. 3) Uzhgorod, Oct 61, by Yu. M. Lomsadze and others
List of personnel of the third continental expedition
Academicians of the Kazakh Academy elected by the general meeting of the Kazakh Academy, 29 May 62.

SPEECHES DELIVERED AT THE PARTY CENTRAL COMMITTEE PLENUM. 30 Jan 63, 16p. JPRS: 17384.
Order from OTS $0.50 63-21021

Trans. from Pravda [Moscow] (USSR) 1962, 23 Nov, p. 3-5; 24 Nov, p. 4.

DESCRIPTORS: *Scientific research, Reports, Conferences.

Transcripts of speeches given at the Plenum of the Central Committee of the CPSU by M. V. Keldysh, President of the USSR Academy of Sciences; M. A. Lavrent'yev, Vice-President of the USSR Academy of Sciences and Chairman of its Siberian Department; V. S. Fedorov, Chairman of the State Committee of the USSR Council of Ministers on Chemistry; and V. Ye. Boyko, Chairman of the State Committee of the USSR Council of Ministers of Ferrous and Nonferrous Metallurgy.

USSR COMMUNICATIONS: SELECTED TRANSLATIONS NO. 5. 8 Mar 61 [10]p. JPRS: 4437.
Order from OTS or SLA $1.10 61-21396

Trans. of 14 short articles from 13 Russian newspapers.

DESCRIPTORS: *Communication systems, Television communication systems, Television stations, Radio relay systems, Telephone communication systems, Telephone lines.

Keldysh, M. V.
THE PRESENT TASKS CONFRONTING SOVIET SCIENCE. 30 Jan 63, 6p. JPRS: 17386.
Order from OTS $0.50 63-21023

Trans. from Pravda [Moscow] (USSR) 1962, 28 Oct, p. 3.

DESCRIPTORS: Science, *Scientific research, Communism, Growth.

Kitov, A. I.
CYBERNETICS (Kibernetika). 29 Jan 63 [17]p. 22 refs. JPRS: 17354.
Order from OTS $0.50 63-21010

Trans. of mono. Fizicheskii Entsiklopedicheskii Slovar' (Encyclopedic Dictionary of Physics) v. 2, Moscow, 1962, p. 357-362.

DESCRIPTORS: *Cybernetics, Control systems, Artificial intelligence, Information theory, Programming (Computers), Bionics.

Meshkovskii, K. A.
ON CERTAIN CLASSES OF TERNARY CODES. 15 Aug 61 [14]p. 9 refs. USASIA Trans. Log no. 1210.
Order from OTS or SLA $1.60 62-32606

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 11, p. 62-70.

DESCRIPTORS: *Information theory, Communication theory, *Coding, Signals, Transmission, Signal-to-noise ratio, Data transmission systems.

Classes of noiseproof ternary codes are derived. The theory of the most noiseproof code (of those known at present) is given, and simultaneously, the principles for developing noiseproof codes designed for transmission of probable mutually independent discrete messages) when normal fluctuation interferences are active in lines of communication. Higher inferior ratings than the Chabauty evaluation are given for the number of non-intersecting spherical segments for a given n and strictly defined angles of expansion θ. The simplest proof is given for the ineffectiveness of the highest binary code for all $n > 3$. (Author)

THE RESULTS AND TASKS OF WORKS ON THE HISTORY OF MEDICINE AND PUBLIC HEALTH (Itogi i Zadachi Rabot po Istorii Meditsiny i Zdravookhraneniya). 18 July 61 [22]p. JPRS: 9719.
Order from OTS or SLA $2.60 61-27244

Trans. of Sovetskoe Zdravookhranenie (USSR) 1961, v. 20, no. 4, p. 3-8.

DESCRIPTORS: *Medicine, *Public health, *History, Literature.

WEST BERLIN IS A BRIDGEHEAD OF SABOTAGE AGAINST PEACE. 31 Aug 62 [9]p. FTD-TT-62-1168; AD-287 727.
Order from OTS or SLA $1.10 63-13175

Unedited rough draft trans. from Pravda [Moscow] (USSR) 1962, no. 215(16071) 3 Aug, p. 6.

DESCRIPTORS: *Political science, Germany, *Military intelligence, Spies, Sabotage.

Bodino, G. Avando.
APPLICATION OF THE THEORY OF GRAPHS TO ECONOMICS. 1962, 128p.
Order from GB $5.50

Trans. of unidentified mono., n.p., n.d.

DESCRIPTORS: *Economics, Statistical analysis, Theory.

Friedrich, H..
RELATION BETWEEN PRODUCTION CONTROL AND MATERIALS ADMINISTRATION DEPARTMENTS AND THEIR ORGANIZATION. Jan 63.
Order from BISI $8 BISI-2564

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 17] p. 1123-1138.

DESCRIPTORS: *Steel industry, *Economics, Production, *Management engineering, Procurement, Costs, Distribution, Statistical analysis, Data processing systems, Materials.

Topchiev, A. V. and Pavlichenko, V. P.
AGAINST THE GROWING THREAT OF THERMONUCLEAR WAR. 29 Jan 63, 7p. JPRS: 17352.
Order from OTS $0.50 63-21009

Trans. of Akademiya Nauk SSSR. Vestnik (USSR) 1962 [v. 32] no. 4, p. 100-104.

DESCRIPTORS: *Political science, Nuclear warfare, Weapons, Control, Conferences.

An account of the Pugwash movement.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6059
Yeremenko, Aleksandra Semenovna, Ivan Yemel'yanovich Virozub and others
METHODS FOR THE EXPERIMENTAL INVESTIGATION OF THE AERODYNAMICS OF AXIAL TURBOMACHINES(Metody eksperimental'nogo issledovaniya aerodinamiki osevykh turbomashin) Kiev, Izd-vo AN UkrSSR, 1961. 129p. 2550 copies printed.

BR-SOV/6060
Vargin, V. V.,
ENAMELING OF METAL ARTICLES(Emalirovaniye metallicheskikh izdeliy) Moscow, Mashgiz, 1962. 546p. Errata slip inserted. 7500 copies printed.

BR-SOV/6061
Aleksandrov, Avraam Yakovlevich, Mikhail Yakovlevich Borodin, and Viktor Vasil'yevich Plavlov
CONSTRUCTIONS WITH FOAMED-PLASTIC FILLERS (Konstruktsii s zapolnitelyami iz penoplastov) Moscow, Oborongiz, 1962. 186p. Errata slip inserted. 4500 copies printed.

BR-SOV/6063
Butenin, Nikolay Vasil'yevich
FUNDAMENTALS OF THE THEORY OF NONLINEAR OSCILLATIONS(Elementy teorii nelinynykh kolebanity) Leningrad, Sudpromgiz, 1962. 193p. 5000 copies printed.

BR-SOV/6064
Novozhilov, Valentin Valentinovich
THEORY OF THIN SHELLS(Teoriya tonkikh obolochek) 2d ed., rev. and enl. Leningrad, Sudpromgiz, 1962. 430p. 5500 copies printed.

BR-SOV/6065
Chernyak, Nikolay Il'ich
MECHANICAL PROPERTIES OF STEEL IN THE REGION OF SMALL PLASTIC DEFORMATIONS (Mekhanicheskiye svoystva stali v oblasti malykh plasticheskikh deformatsiy) Kiyev, Izd-vo AN USSR, 1962. 103p. 2350 copies printed.

BR-SOV/6067
Pisarenko, Georgiy Stepanovich, Igor' Andreyevich Kozlov, and others
SOME PROBLEMS OF THE STRENGTH OF GAS-TURBINE BLADES AND DISK; THERMAL SHOCK RESISTANCE OF BLADES AND ULTIMATE LOAD-CARRYING CAPACITY OF DISK(Nekotoryye voprosy prochnosti lopatok i diskov gasovykh turbin; stoykost' lopatok protiv teplosmen i predel'naya nesushchaya sposobnost' diskov) Kiyev, Izd-vo AN UkrSSR, 1962. 74p. 1660 copies printed.

BR-SOV/6068
Davydov, Yuriy Petrovich, and Grigoriy Vasil'yevich Pokrovskiy
SHEET STAMPING OF ALLOYED STEEL AND ALLOYS (Listovaya shtampovka legirovannykh staley i splavov) Moscow, Oborongiz, 1962. 198p. 6550 copies printed.

BR-SOV/6069
Rivkin, Samuil Simonovich
THEORY OF GYROSCOPIC DEVICES; PART I (Teoriya giroskopicheskikh ustroystv; Chast'I) Leningrad, Sudpromgiz, 1962. 506p. 6200 copies printed.

BR-SOV/6070
Babayeva, Nina Fedorovna, Valentin Mikhaylovich Yerofeyev and others
PARTS AND ELEMENTS OF GYROSCOPIC DEVICES (Detali i elementy giroskopicheskikh proborov) Leningrad, Sudpromgiz, 1962. 497p. Errata slip inserted. 4800 copies printed.

BR-SOV/6071
Nosov, Yuriy Andreyevich, Dmitriy Nikolayevich Popov, and Sergey Nikolayevich Rozhdestvenskiy
SOME PROBLEMS IN THE DESIGN AND CONSTRUCTION OF AIRCRAFT HYDRAULIC SYSTEMS(Nekotoryye voproxy rascheta i konstruirovaniya aviatsionnykh gidravlicheskikh sistem) Moscow, Oborongiz, 1962. 231p. Errata slip inserted. 3500 copies printed.

BR-SOV/6072
Mikhaylov, A. I., V. V. Borisov, and E. K. Kalinin
CLOSED-CYCLE GAS TURBIN PLANTS; THEORY AND DESIGN(Gazoturbinnyye ustanovki zamknutogo tsikla; teoriya i raschet) Moscow, Izd-vo AN SSSR, 1962. 145p. Errata printed on the inside of back cover. 4000 copies printed.

BR-SOV/6073
Golushko, Nikolay Aleksandrovich
GRAPHITE-CONTAINING REFRACTORIES (Grafitsoderzhashchiye ogneupory) Moscow, Metallurgizdat, 1962. 108p. Errata slip inserted. 2800 copies printed.

BR-SOV/6074
Glizmanenko, Dmitriy L'vovich
OXYGEN PRODUCTION(Polucheniye kisloroda) 3d ed., rev. Moscow, Goskhimizdat, 1962. 591p. 22000 copies printed.

BR-SOV/6075
Kozlov, Valentin Mikhaylovich, and Valentin Dmitriyevich Turovskiy
BERYLLIUM; TOXICOLOGY, CLINICAL TREATMENT OF DISEASES, AND INDUSTRIAL HYGIENE (Beriilliy; toksikologiya, klinika porazheniy, gigiyena truda) Moscow, Atomizdat, 1962. 117p. 2300 copies printed.

TRANSLATIONS IN PROCESS

AEROELASTICITY SYMPOSIUM (Aerolastisches Kolloquium)
Max-Planck Institute fur Stromungsforschung, Gottingen. Mitteilungen (West Germany) 1958, no. 18, 180p.

AURORAE AND AIRGLOW, 1961, NO. 7.
Polyarnye Siyaniya i Svechenie Nochnogo Neba: [Sbornik Statei] (USSR) 1961, no. 7, 90p.

CHEMISTRY AND USE OF ORGANOPHOSPHORUS COMPOUNDS (WORKS OF CONFERENCE NO. 1, 8-10 DEC 1955).
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